



The Intervention of the Dentist in the Cure of Syphilis.

By DR. J. A. TAMAYO, Panama, Colombia.

"Dentistry is the science and art of medicine as applied to the dental organs."

From this it is deduced that the dentist must be a physician in his specialty as well as a mechanician. He needs as much skill in mounting a set of teeth, now on gold, now on rubber, as genius and science to cure the parts which are to receive the denture. It is impossible to place a plate, or mount a bridge if the palate or gums are in a state of suppuration. Dentistry is a specialty of medicine, but of an extraordinary extent, and it is extremely necessary to live exclusively, study and practice for a long time in order to reach that height to which this most important part of medical science has attained, and be able to combat with positive results the innumerable afflictions of the mouth which humanity is heir to.

There is a terrible, frightful disease, which is, unfortunately, distributed over all organized beings of the earth, which, like leprosy, unless it be combated and done away with, will pierce the flesh, annihilate the bones and end in depriving the thoroughly debilitated body of its assistance. This disease, if it be not communicated in the womb, is acquired inadvertently in the diverse alternatives of life, and especially if the organism in exercising its animal functions, gives itself up unreservedly to the ardent pleasures of matter. One most unfortunate instant only is sufficient to inflict the organism. The blood is still circulating, but in intimate association with the poison, which, sooner or later, seeking an outlet in its development, will break through some part of the body. And if, as it usually happens, the lethal poison, on emerging from the vessels and arteries, which hold it, selects the mouth as the point of appearance, we ask:

"Will the professional assistance of the dentist be urgently needed?

He is no longer the *tooth puller* as the populace ignorantly calls him. Then the *tooth puller* is dentist and syphilographic dentist. It is here the dentist begins his scientific work, for his presence is made indispensable; his intervention is necessary in the curative treatment of syphilis.

The appearance, therefore, of buccal lesions urgently calls for the immediate assistance of the dentist, and justifies his intervention as we shall demonstrate.

Syphilis attacks man in three grades of severity, which, according to its intensity offers symptoms called respectively, primary, secondary and tertiary.

From the appearance of the primary symptoms, it happens sometimes that the oral cavity is attacked, and in such a case, the lesions of the buccal membrane are the result of an infection, inoculation or syphilitic absorption in the organism, together with local irritations, as caries, tartar, dirtiness, excessive use of alcohol, tobacco, etc. During the mercurial treatment frequently also the phenomenon of salivation or ptyalism shows itself, which forces the physician to interrupt the treatment. The appearance of ptyalism leads to the belief of the pre-existence of an ulceration in the gum, the palate or throat, in which case the physician with the assistance of a dentist must proceed without losing time to scrupulously examine the organs mentioned. All causes of local irritation have a powerful influence over the production of morbid phenomena of the mouth, and to combat them the syphilographic dentist must needs look for them in the dental arch where syphilitic ulcerations may center.

Dental Work in Syphilitic Cases. The intervention of the dentist at the beginning of and during the time of the anti-syphilitic treatment has two very important objects: Firstly, to prevent the appearance of lesions in the buccal membrane; secondly, to prevent the noxious effects of the mercurial treatment.

Carious teeth, the more or less deep cavities of which present sharp points or cutting edges, are, for example, good data to guide a good diagnostician. Roots, which protrude above the level of the gum, are equally bad since they cause in the tongue, the cheeks or lips, excoriations or cracks which are readily infected. Moreover, these roots constantly keep up at the point of emergence an ulcerous wound, which in a syphilitic rapidly widens and may be converted into a center of propagation of the general ulceration of the mouth.

As to the filling of teeth, those which may not have been perfectly made, must be patched or made over, lest the material employed, on diminishing from contraction, fracture or waste, expose the edges of the cavity.

In their normal state, teeth present blunt edges and rounded angles, although in certain cases a waste in the masticating surface occurs which converts these edges and angles into sharp ones, with the result that more or less grave wounds may appear on the tongue.

Irregular dentures must be considered of exceptional importance. With jaw bones, the curves of which are very little developed, the teeth will project towards the inside or outside of the curves with the result that the protruding tooth forms a depression in the tongue or causes a hollow in the cheek, for which reason and under the influence of the mercurial medication, the membrane will soon become inflamed often to an alarming extent.

The loosening of the gingival membrane around the lower wisdom tooth where the posterior part of the gum, instead of adhering to the neck, remains loose, may become the starting point of an indolent ulceration. In this state the inflamed gum rises in the form of a hood above the tooth, which, compressed by its antagonist during mastication, is the center of intense pain. Even in a case where there is no general inflammation, the presence of particles of food is sufficient to produce grave gingivitis, thus preparing the way for the easy appearance of an ulcer, especially if there is tartar, of which enemy very few mouths are effectively exempt. Finally, a common cause of lesions of the mouth are prosthetic pieces, which on account of their bad construction do not adhere closely to the gum or teeth.

Mercurial Poisoning. During the mercurial medication the roots become exceedingly painful, and periostitis, which had not manifested itself before, will frequently appear.

The action of the mercury in the soft tissues surrounding the tooth is felt often in even apparently healthy mouths, in the softening and the general tingling pain of the teeth. The buccal membrane is one of the most delicate of the body, and its extraordinary susceptibility varies with the individual sex or age to an extent that often a single irregularity in the teeth, or an empty space in the dental arch, is sufficient to produce an ulceration, which in spite of local treatment might continue indefinitely. Thus, therefore, the dentist is obliged to remove every cause of irritation as soon as he encounters it either in persons apparently healthy as in those where he suspects that they have been or are threatened by syphilis. In every case it is best to do it before submitting the patient to the mercurial treatment. In fact, after a rigorous examination, he ought to begin cleaning tooth after tooth and wash the gums, which will return to their natural beauty, presenting hardness and a beautiful red tint. But if, on the contrary, they remain painful, congested, if they bleed or are easily loosened,

then they must be energetically cauterized in order to destroy those spongy tissues and create others strong and healthy. It is necessary also to extract immediately any root and to watch the healing of the wound in order to prevent any new infection in the open wound. Carious crowns must be well filled, taking care not to leave a point or cutting edge which might lodge matter or wound the tongue. In a like manner, the teeth which, on account of their notable projection, are prominent in the cheeks or in the interior of the mouth, not being useful for mastication, but obnoxious and hurtful, must be extracted. If the gum surrounding the wisdom tooth is diseased, it ought to be destroyed by cauterizing or by incision. If in spite of all the gum continues diseased, let the molar be extracted.

The intervention of the dentist in the cure of syphilis does not end here. His assistance is necessary from the moment the physician begins the mercurial medication, to attentively watch the course and action of the mercury in the buccal membrane, moderating or correcting its effects, and even interrupting the treatment if some danger threatens.

At the appearance of a stain or excoriation, the dentist must ascertain if its starting point is one of the causes mentioned. Observing a rigorous zeal, a systematic vigilance, there ought not to be a complication that paralyzes the treatment.

As to the hygiene of the mouth to be followed,

Dangerous Dentifrices. all dentifrices with unknown components, also those containing Peruvian bark, carbon or other insoluble

powder, ought to be rejected; although these are astringent and antiseptic, their insolubility does not permit of absorption, and consequently they exercise a noxious mechanical effect, wounding the gum and preventing the epithelium and mucous membrane from again covering the ulcerated surface. Antiseptic lotions are always to be preferred so that their therapeutic action may take place by means of absorption. Let it be remembered that dentifrices with insoluble ingredients which, when lodging in the interstices of the teeth and mixing with the buccal fluids and particles of food, will ferment, being converted into a species of crust, which, when becoming loosened, will probably have a new point for suppuration.

The only real and true specific for syphilis is mercury, and, to administer it well, many circumstances must be considered and precautions taken. A woman for instance is more susceptible to the energetic action of the mercury than a man. The beneficent metal may enter the organism through any of these ways: the skin, the respiratory membrane or the digestive tract. The injection of mercury offers two advantages over any other means of introducing it, i. e., through its rapid assimilation by the

blood, the cure is more active; as it does not pass through the mouth, the teeth are not stained.

To prescribe mercury and give it in sufficient doses, it is not sufficient to be face to face with syphilis; it is interesting, moreover, to inquire into the antecedents, know the manner and habits, and above all the idea the patient may have of a true oral hygiene. Observing these rules, physicians will be able to avoid complications and mistakes which frequently oblige them to suspend treatment, thereby delaying the cure.

Let not the patient forget that before undergoing the treatment with mercury, and during the course of it he indispensably needs the dentist. If he does so, the cure will be rapid, he will suffer less, and save much money.

Making Gold Solders.

By DR. FRANK BRANDRETH, Royersford, Pa.

The paper published recently in *Dental Brief* on solder making recalls to my mind the fact that we made solder in just exactly the way the writer describes fully twenty years ago, and I have long since abandoned the process because it is inaccurate and unscientific to a marked degree.

To make gold solder accurately and scientifically let us begin properly, remembering that pure gold contains twenty-four grains of gold to every pennyweight and twenty-two karat gold contains twenty-two grains of gold to two grains of alloy, and eighteen karat contains eighteen to six, etc.

Now we will readily see that by making eighteen karat gold solder with eighteen karat gold plate by merely adding one and a half grains of zinc to the dwt. of gold we reduce the karat to just sixteen and a half, presuming that the exact quantity of zinc remains in the alloy. But it does not remain if the solder is melted in the manner described by the writer, viz., "with the blow-pipe on an old piece of crucible." In fact, you have remaining after this procedure a piece of metal of a very uncertain karat, though it will solder gold plate in a way. Yet it is just as doubtful what karat it is (probably more so), as that sold by the depots and far from being as malleable, so of the two kinds I prefer to use the manufactured solder as sold by the depots.

To Make Eighteen Karat Solders.

Therefore, to make solder that is really eighteen karats fine use pure gold as a basis. Take eighteen grains of it, add six grains of alloy to it, one grain and a half to be zinc, the rest of the six grains to be silver, with a portion of copper, a grain or so. This will be a better color than all silver and zinc, as the two metals last named

give to gold a greenish cast, which is objectionable. Next is the melting, which should be done in a furnace just as carefully as you melt your finest gold plate; indeed, it requires greater care to properly melt solder than to melt plate, in order to retain the zinc, which is important for an easy-flowing solder, and if melting is properly done the zinc will not burn out or volatilize an iota. As proof that this can be done I mention the fact that the last melt I made contained about half a pound of various metals, zinc being one of them, and careful weighing, before and after melting, failed to show even a loss of one grain. So then we see that properly weighing the metals to desired karat will give us a definite karat solder, and careful melting will give us malleability, also an easy-flowing solder.

The writer of the article referred to is desirous of developing this feature of laboratory work more fully, hence I offer this brief paper on the subject. I have many more formulæ for making gold solders, gleaned during a twenty years' experience, but this one I believe to be the most practical for the dentist, where so much solder is necessarily flowing over bridge work.

The solders that I really prefer to use when practical are those made without zinc, such as expert jewelers use for soldering a nicely fitted joint, which is almost imperceptible before the solder is used at all; but as the average dentist does not fit his work up to permit using it, he will only meet trouble by doing so.

For other karat solders than eighteen adhere to the same plan as stated, that is, reduce the gold to required karat with silver, or copper and silver, and have the zinc a part of the quantity not an addition to it.

Cin-Foil Fillings.

Reply to Dr. Bernard.

By JOHN E. STOREY, D.D.S., Morenci, Ariz.

What dentist of the present day employs tin-foil regularly in his practice? Echo answers me. I just want to say in reply to Dr. Bernard that I use tin-foil often for filling soft and chalky teeth and the teeth of children, especially the sixth year molars. I also use tin, in combination with gold, which I consider better than tin by itself.

The filling with tin and gold is very soft at first, but finally a chemical change takes place and the filling becomes very dense and hard. The chemical alteration which takes place between the two metals seems to

change the chalkiness of the tooth, and imparts to it a density that could not be obtained by any other filling material; hence in my opinion it is the better of the two as a preserver of tooth structure.

The method employed for the insertion of a tin filling also applies to tin and gold. While my method of inserting fillings may not be the same employed by McClellan, Green, Thompson and others, it gets the filling in. My method is the one known as the Herbst, and of course every filling is done by hand pressure and finished with burnishers and a smooth foot plugger, which does not cut the filling and cause it to flake, but packs it very hard. The main point is to prevent leaking, which is sure to occur if the operator is at all careless, and I find from observation that quite a number are.

I recall the case of a young lady who had exceptionally soft and chalky teeth. She presented herself to my father, the late Dr. John C. Storey, to have her teeth filled before leaving for school. Owing to the condition, he decided on tin and gold as the best filling material, and inserted the fillings with the exception of one tooth, which was in such a condition that it could not be filled without treatment; and as the young lady thought she would not have time for the treatment, my father advised her to have it treated and filled as soon as she reached her school. She presented herself to the school dentist, and after he had examined her mouth he asked her who had filled her teeth, and when told exclaimed in disgust that her teeth had been ruined by such fillings. She quietly walked out of his office. It is safe to say that dentist never had seen a tin and gold filling in his life before, and did not know what it was. To my knowledge, those fillings are there today, and giving good service, after more than fifteen years. Had gold or any other filling material been used except tin and gold, I do not believe she would have had natural teeth today.

The great trouble with such fillings is that they are hard to put in, and many operators cannot get the fee they think it is worth; hence they use cement or amalgam, which is all wrong. They should use patience and explain to their patients the benefit to be derived from the different filling materials, and make the patient see where each piece of work is worth the fee asked.

Making Amalgam Alloy.

By F. McL. LONGLEY, D.D.S., Aberdeen, Miss.

Since the publication of my short article in the April issue of ITEMS OF INTEREST on the composition of amalgam alloys, I have had numerous letters from members of the profession asking for my method of making alloy in my office.

As this is an experience which a very small proportion of the profession have had, I will give my method as briefly as possible. And before I go further, let me state that our colleges are sadly deficient in this matter of practical metallurgy. They give a few lectures on the subject, but it is, indeed, a small number of the graduates that have had any lessons in the making of an alloy. It is a lamentable fact that very few of them have any idea of the metals, and in what proportions they should be used to make the best alloy.

A very much smaller number know how this alloy should be made, and still fewer of them have had any practice in the work before graduation. They seem entirely too willing to trust to the manufacturers for whatever they see fit to give them as the *best made*.

This is not intended as a criticism of the manufacturers, but they are compelled to view the matter largely from a financial standpoint, and figure the profits on this or that combination before they put it on the market, and then the combination is kept a secret, as is the case with a patent medicine. I maintain that we should know the formula and be able to judge intelligently whether it is the proper one for use in our patients' mouths. In this matter quite a large portion of the profession is ignorantly deficient, and in order to be independent we must not only know the composition of the alloy we intend using, but be able, if necessary, to make it in our offices.

In my former article on the composition of alloys I stated that I had found better results from an alloy composed of silver, sixty-five per cent.; tin, thirty per cent.; gold, three per cent., and zinc, two per cent.

Method of Making Alloy.

I usually make of this ten ounces at a time, requiring six and one-half ounces of silver, three ounces of tin, three-tenths of an ounce of gold, and two-tenths of an ounce of zinc, being careful to buy absolutely pure metals.

I use a sand crucible to melt it in, a little larger than is necessary to hold the metals. Put it in the furnace and leave it until it is red hot. Have it about one-third full of borax, and when the borax is melted rub it around the inside of the crucible with a copper rod shaped for the purpose. It is then ready to receive the metals.

For putting these in I have a copper trough about eighteen inches long, two inches wide and one inch deep. Place the metals in this trough, mixed with a good sprinkling of borax, in the order in which we want them to go into the crucible, as follows: Silver, tin, gold, and lastly the zinc. Hold the end of the trough over the top of the crucible, and with the copper rod begin pushing in the silver, a little at a time, until it is all in and melted. Then put in the tin, which melts immediately, as it melts at a much lower temperature than silver. The gold should now be put in, a little at a time, as fast as it melts. It should be rolled out in very thin ribbons, in which form it can be had ready prepared from the refiner. As soon as the gold is thoroughly melted, push in the zinc all at once, followed by a good supply of borax. Stir the mass a little with the end of the copper rod, which should be kept red hot, and pour immediately into the ingot mould. I use for this purpose the solid half of a flask.

A good deal of precaution must be used after the zinc is put in, as it melts immediately and oxidizes very rapidly if left too long on the fire. It is now ready for filling up.

For doing this properly I screw the ingot in the jaws of a rather heavy bench vise, unscrewed from the bench and placed on the table in a large flat tin tray about an inch deep, which catches the filings. File it off with a large rasp, and when it is all filed up remove the vise out of the way, take a strong magnet and pass carefully through every portion of it, until every particle of iron that may have gotten into it from the vise or file is removed. Next pass it through a very fine sieve, and then stir and blow in it to remove any light particles of trash that may have gotten into it.

It is now ready for the cabinet, and we have the satisfaction of knowing that we have exactly the alloy we want. From a financial standpoint, we save enough money by making it ourselves to pay us well for the trouble.

Fees and Feelings.

By DR. STEWART J. SPENCE, Harriman, Tenn.

Even with fees forced down, as they are, to the lowest ebb, the dentist, who has any fellow feeling for poor humanity often has it aroused to a painful pitch by the despairing look which crosses the face of a poor patient, when fees are stated in answer to the tremulous inquiry as to what they will be.

In this portion of the southern Appalachians, the "poor mountain white" largely abounds, and occasionally one of this class wanders into a dental office. "Is the tooth dentist in?" is the first inquiry.

"Yes, madam; I am that unfortunate individual. Won't you take a seat?" Not the slightest relaxation comes over the hard drawn, sallow features at this playful reference to himself, and the dentist concludes that flowers and flourishes of speech are here out of place.

"What would you charge to —?" This is invariably the second question, and often the latter part of it is lost by the patient's finger being thrust into the mouth to point out the offending organ. No sense of the propriety of things ever prevents the poor mountain white from putting this question to the front. On one occasion, while operating for one such I could not restrain my tears, having lately heard of my mother's death, and on excusing myself for thus weeping, she stoically replied: "That's all right. What would you charge me to — do so and so?"

By the time the finger is out of the mouth, the dentist has said: "Step forward and take a seat in the chair and let me see the tooth."

"What'd you charge me to pull it?"

"Only fifty cents. But I think I can save it for you."

"Fifty cents! Why, Dr. Dosem pulls 'em for nuthin'. But ain't you got some stuff you can rub on the gums and keep 'em from hurting when you pull 'em?"

"No, madam. I regret to say that dentistry has never yet discovered that thing. We have cocaine, eucaine, nirvanin, chloretone and a host of mixtures, but none of them will do more than to more or less alleviate the suffering."

"Why, ain't you the dentist that pulls teeth without pain?"

"No, madam; he is farther up the street. But let me assure you a three-rooted tooth like this, sore to the touch, is sure to hurt considerably, no matter what is used or who uses it unless you take gas. I can save that tooth for you by cleaning out its roots and filling it."

"What'd that cost?"

"Three dollars."

"Three dollars!"

"Yes; it's a good three hours' work. That's only a dollar an hour."

"Pears to me that's mighty high. My ole man has worked many a day for fifty cents."

"Yes; but you must remember that I have office rent to pay, and that I might have to wait here all the rest of the day without another patient."

"What'd you charge jest to stick a little gold in this here front tooth?"

"That? Let me see. Yes, this corner will have to be broken away, making it a large contour filling of nearly three hours' work. Three dollars."

"Well, I cain't hev nuthin' done. (Rising and getting out of the

chair with a sigh.) I guess I'll wait a little longer and hev 'em all pulled out and a false set put in. What'll that cost?"

"I wouldn't do it at any price, madam. Your teeth are far too good to be sacrificed to the forceps. Besides, a plate would cost you ten dollars, and then it would probably need refitting in less than a year."

"Well, I cain't give that much. I kin git 'em down at —— fur five dollars. I seed it in the papers."

The dentist perceives that his fair patient is beginning to regard him as but little better than a highway robber, and he launches forth into a defense of his moral integrity, interspersed with allusions to grocer's bills, taxes, rents, and something about a wolf at the door, which animal is particularly addicted to visiting country dentists. He ends up with a dismal reference to the flood of brand new young dentists inundating the land, and this leads her to remark:

"Thar was one up our way a year ago, and Tabithy Evans sold her cow and had him put in sixteen fillin's in her teeth, and now they's all out but one, and the poor gal's got neither cow nor teeth."

"Yes; that's the way with the boys the first year or two of practice; but they have to learn on somebody, you know."

"Well, I ain't got no money to spend on fillin' teeth. 'Taint no good. Say, mister, thar's Sarah Owens got a tooth gone in front, broke off at the root, and she wants to know how much it costs to put on a gold crown?"

"Oh, we don't put gold crowns on front roots—only on back ones. The charge for a gold crown is six dollars. I'll put on a nice gold and porcelain crown at the same price."

"Well, I'll tell her. Guess I'll go now. Good-bye."

"Don't you want anything done to that sore tooth? Better let me treat it and probably abort an abscess."

"Not today. I'll come back if it don't get no better. Good-bye." Exit patient.

The moral of this narrative is, that dentistry fails to reach the lower third of society. Even at the very moderate fees now regnant, it is above their reach. Moreover, in remote country regions they often fall a prey to the unpracticed graduate, desirous of "whetting his virgin steel" in places where an eventual extension will be for him prevention. This produces in them distrust of dentistry. What is the remedy for these twin evils?

I can suggest one; but, alas, the world is not yet sufficiently civilized to adopt it. It is, that dentists and physicians shall be educated and paid by the State. Of such great value to the nation would be a thoroughly educated corps of dentists, operating without charge, and thus reaching

the masses, that Uncle Sam ought to seriously consider this matter. Six well equipped colleges could give much better instruction than is given by the majority of the forty or fifty dental graduate mills now running in the country. The demand for cheap, and therefore, poor work, would cease. If free dentistry is a good thing for the army, why not for the whole nation?

Plan and Scope of an International Dental Congress during World's Fair, 1903.

By DR. BURTON L. THORPE, President Missouri State Dental Association.

The Louisiana Purchase Exposition will demonstrate to the world the advancement of civilization and the achievements, not only of American citizenship, but of the world's progress.

The best workers in science, art, philosophy, literature, agriculture, trade and labor will mass and compare the returns of their labors.

American dentistry is recognized the world over for its superior achievements. No profession has made greater strides in scientific research, or has attained higher excellence from an artistic or humanitarian standpoint than our profession. It is indeed fitting that dentistry, occupying the high place that it does in science and art, should be represented, as will be all the collateral sciences, in a congress of the progressive dentists of the world, who will come together for professional, scientific and social purposes, demonstrate the latest methods and compare results.

The Missouri State Dental Association, believing such a congress would be of great benefit to the profession, has taken initiative steps in this matter by appointing a committee of seven St. Louis dentists, composed of Doctors Wm. Conrad, M. C. Marshall, F. F. Fletcher, Walter M. Bartlett, L. G. McKellops, J. M. Kennerly and E. L. Thorpe, who have begun the preliminary work, to be followed by the National Dental Association, which will have full charge of the congress.

At the request of Mr. John Schroers, chairman of the Committee on Education for the Louisiana Purchase Exposition, I present the following suggestions as to plan and scope:

The plan followed by the World's Columbian Dental Congress, at Chicago, in 1893, should be followed, except that a Director-General for this congress should be appointed, who would have full charge of all arrangements, and devote his whole time to the work of organization.

He should be a man of national reputation, conversant with details and able to handle the entire work in a business-like manner. The other officers should be a president, vice-president, secretary-general and assistant secretaries, who possess linguistic abilities, and a treasurer. The main committees should be an executive committee, committee on finance, committee on arrangement, committee on invitation, committee on printing, committee on transportation, committee on programme, committee on exhibits, committee on registration, committee on reception, committee on education and literary exhibits, committee on applied sciences, committee on conference, committee on history, committee on nomenclature, committee on prize essays, committee on pathology, committee on biology and bacteriology, committee on appointment of dental surgeons in armies and navies of the world, committee on care of teeth of the poor, besides numerous other minor committees. The programme should be presented in sections, each topic classified, thus avoiding confusion. The programme to consist of essays and lantern lectures on anatomy, histology, etiology, pathology, bacteriology, chemistry, metallurgy, therapeutics, materia-medica, dental and oral surgery, operative and prosthetic dentistry, orthodontia, education, legislation and literature and clinics by expert operators, to demonstrate the latest methods of operative procedure in dental and oral surgery. The exhibits to consist of biological, bacteriological and pathological, and the newest improvements in instruments, appliances and materials. The time between sessions to be devoted to such entertainments as excursions, garden parties, conversations, receptions, luncheons and a banquet.

The World's Columbian Dental Congress held at Chicago had a paid membership of 1,074, and was self-sustaining. The St. Louis Congress will likely double the membership of the Chicago Congress.

The following of this plan, with the addition of such features as may be deemed advisable, would give to our profession a great meeting of much benefit to all attending and to the dental world in general.



The Shell or Telescope Crown.*

By HART J. GOSLEE, D.D.S., Chicago, Ill.

VII.

Indications, Contraindications. Requirements: Telescopng Portion, Occlusal End. Methods: Sectional Method, Procedure; Measurement, Bands; Width, Length, Soldering, Fitting, Contouring, Occluding Bite. Impression. Articulators. Processes for Cusp Formation. Carved Cusp and Special Die Methods. Procedure: Swaged Cusps, Mould, Dies, Swaging, Adjusting Cusp, Soldering Cusp, Finishing. Solid Cast Cusps.

Brief reference has already been made to the history and usefulness of the gold shell or telescope crown, and to this style of crown as having been one of the early achievements in the preservation of badly decayed teeth or roots, and the restoration of their former functional activity.

Regardless of the progress and development of crown work in general, however, and irrespective of the esthetic and hygienic advantages of porcelain work, this style of crown is still, and probably always will be, one of the very best means and methods of subserving the requirements. Indeed, when their application is indicated, and when the adaptation and construction, by whatever method chosen, is practically and skillfully executed, no other one method of procedure seems to offer so great an opportunity for the serviceable and permanent reproduction of the normal condition.

As a natural consequence, and because of the time-proven value of a method affording such opportunities and possessing the possible qualities of strength and indestructibility to so great an extent, many roots have

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been permanently saved and made useful that would otherwise have been lost; bridge-work, both fixed and removable in character, has developed and become practical; and yet the esthetic and artistic possibilities of modern prosthesis have been most flagrantly abused by injudicious use, and indiscriminate application.

If dentistry is to become universally acknowledged as a profession embracing a field of dignified and scientific pursuit, and if dental prosthesis is ever to be accorded the recognition and distinction of an *art*, to which the scope of its possibilities entitle it, the somewhat common practice of placing gold crowns on teeth, within the range of vision in the mouth, violating all traditions of art, must be considered as degrading, and should be most vigorously condemned.

No matter how skilfully the operation may be made, or how perfect the result obtained, such evidences of artificial handiwork whenever prominently conspicuous are an offense to art, culture and refinement.

As a result of the appreciation of the laity of more artistic endeavor, and their education at the hands of those conscientious enough to exercise their *duty*, the request for such work is now so limited, and so few will even tolerate them, that the pernicious practice is of necessity confined mostly to either unscrupulous charlatans, or to those who wilfully cater to a perverted taste and a barbaric vanity.

As many teeth requiring artificial crowns, however, are beyond the range of vision, gold crowns may often be used without objection, and to the best possible advantage.

Their application is indicated, principally in restoring the roots of molars, and occasionally of second bicuspids, but rarely anterior to them.

In cases of close occlusion, where the cusps of the opposing teeth when brought into direct occlusion afford but little, if any opportunity for securing sufficient strength with any style of porcelain crown; and on roots so short, disintegrated and weakened as to require support and restoration with amalgam, especially in the mouths of men where their presence may not be conspicuous because of the beard, their application to the first bicuspids may be sometimes permissible; also in the preparation of bicuspids which are to serve as abutments for bridgework, where it seems advisable to allow the natural crown to remain as long as possible, in order to afford greater integrity in the attachment of the artificial crown, and thus secure increased mechanical resistance to the stress imposed upon the bridge.

Anterior to the molars, however, and particularly in the mouths of women, their application is usually contraindicated in view of the more artistic

means available. Any exceptions should be based only upon a conscientious consideration of the existing conditions and practical requirements of the case; and their application to the incisors and cuspids, in any event, should be regarded as an unpardonable offense.

Requirements.

The requirements for this style of crown do not differ essentially from those of crown work in general, as previously outlined. Whenever and wherever employed, they should be constructed of a material thick and heavy enough to possess adequate strength *when finished*, and sufficiently high in karat to withstand the chemical action of the secretions.

The band or that portion which telescopes the

Telescoping Portion. end of the root should fit closely around the entire circumference; pass a *short*, but *uniform*, distance beneath the gingival border of the gum, and possess a smooth *rounding* edge so as to offer no possible irritating influence to the tissues surrounding it. It should also be contoured to typical form, restore the points of contact, and preserve a proportionate and symmetrical alignment, with the adjacent teeth.

The cusps forming the occlusal end should

Occlusal End. mimic or approach a typical reproduction of the individual tooth; restore the normal occlusion by contact with opposing teeth at several points, and offer no interference to the lateral motion of the jaw in the various movements of articulation.

They should also be deep and sharp enough to aid in the act of mastication, and of sufficient thickness to withstand constant and continued attrition.

A very common fault with a large majority of these crowns is the presentation of a more or less smooth and uninterrupted masticating surface. Such a condition precludes the proper mastication of food, and minimizes the possibilities of service and usefulness, which may be easily obtained, and which qualities such substitutes for the natural condition should always possess.

Methods.

The general usefulness of this style of crown has resulted in the presentation from time to time of an innumerable variety of methods and systems for their construction.

The degree of skill possessed by, and the personal preference of operators enter into the use of all of them to such an extent as to have so far prevented the adoption of any particular one as a universal system.

Two general methods of construction are employed—the *Sectional* and the *Seamless*, and each has many diversified processes.

The sectional method, wherein the band and cusp are made separately and subsequently united, is the most commonly used. This procedure seems to afford more absolute accuracy in securing adaptation; even better opportunities for the reproduction of the necessary contour; consumes less time, and admits of the use of a heavier gauge of gold throughout the construction of the crown. These important advantages cause it to be readily accepted as the most universally successful method.

The joint made in the union of band and cusp offers no objectionable features, and in no way interferes with artistic possibilities, if the edges of each are closely and perfectly approximated, and the union made with a solder closely resembling the gold in color, and sufficiently high in karat to withstand the chemical action of the secretions without subsequent discoloration.



Fig. 58.

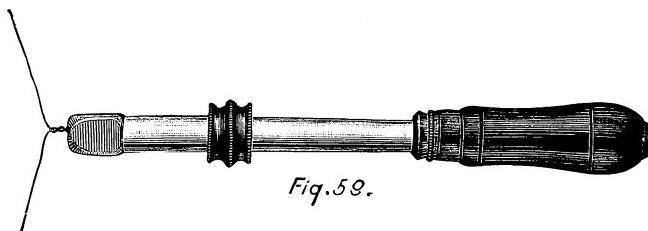


Fig. 59.

In the procedure incident to the mechanical construction of a crown possessing a band by any method, the first detail is obviously that of securing a true measurement of the diameter of the root to serve as a positive guide in obtaining a band of accurate dimensions.

Measurmen . For this purpose wire, thin, narrow copper strips, and waxed floss are used. Bessemer steel wire, about No. 32, is preferable, however, because of being easier to adjust and handle, and more reliable.

It should be cut in suitable length, made in circular form, somewhat larger than the root, and the ends then securely attached in a small dentimeter, avoiding any unnecessary surplus.

While many varieties of dentimeters have been suggested, a small jeweler's slide pin-vise affords the quickest, easiest and most secure adjustment, with less danger of cutting the wire when twisting.

The loop of wire should be then placed over the root, passed just freely beneath the gingival border of the gum, and twisted taut, being careful in the meantime to conform and adapt it to all concavities of the root. Fig. 58.

In very short roots, it may become necessary to hold it under the gum with a suitable instrument, to prevent displacement while twisting; and, while it is usually most convenient to have the twist upon the buccal or labial surfaces, in second and third molars it may sometimes be found more convenient to twist from the lingual surface.

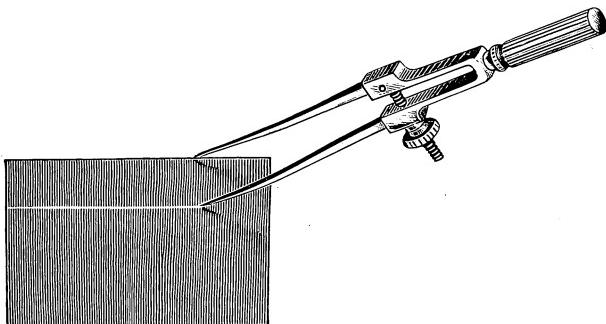


Fig. 60.

After securing the correct measurement of the diameter of the root the wire should be cut in two at a point farthest away from the twisted portions, and each end of the former loop then carefully straightened out until smooth, parallel with each other, and at right angles with the dentimeter. Fig. 59.

When two or more crowns are being constructed for the same mouth at the same time, especially when the roots are nearly of a size, each measurement should possess some characteristic to distinguish it from the other, by which means any confusion in the subsequent fitting of the band may be avoided. This may be easily accomplished by so bending or shaping the surplus ends as to differentiate between them, and have each designate the root which it represents.

As the strength possessed by the crown, in its attachment to the root, increases in proportion to the thickness of the gold of which the band is made, so long as it is not *too* heavy to be easily manipulated and accurately adapted,

Bands.

and as gold stretches easily, and its thickness is necessarily diminished by the subsequent process of finishing and polishing, 28 gauge (B. & S.) plate, about 22 karat in fineness, should be used for bands. A gold for this purpose is especially prepared by the Consolidated Dental Mfg. Co. which is alloyed slightly with platinum, and possesses the advantages of strength and toughness as well as being non-oxidizable, by which name it is designated.

The desired width of the band should be noted

Width. with the eye, or, if necessary, measured with a piece of cardboard trimmed to the correct width, or with a small compass. Fig. 60.

In cutting the gold the cervical edge, or that which is to be fitted to the root, should be the *exact* length of the measurement wire; but the variation or

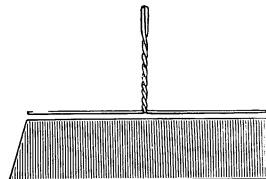


Fig. 61.

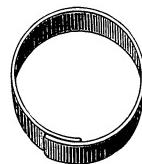


Fig. 62.

inequality between the diameter of the root, in proportion to the dimensions of the space to be filled by the crown, to obtain the most artistic results, often requires that one end of the band be cut on such an angle as to make a difference between the circumference of its cervical and occlusal edges when soldered. Fig. 61.

While perfectly straight edges will often afford sufficient opportunity for the necessary shaping and contouring of the occlusal end, it is frequently desirable and sometimes necessary to have this edge of slightly larger proportions, especially in bicuspids, in order to more perfectly and artistically meet the requirements of contact and alignment.

Where the root is proportionately larger than the space to be filled, however, the converse of the proposition may be indicated, in order to secure and preserve an alignment of the occlusal surfaces. In such instances the edges should be cut *straight*, in order to facilitate the adaptation to the root, after which the circumference of the occlusal edge may be adequately reduced.

Soldering. When the band has been properly cut it should be annealed, the edges filed smooth, so as to approximate evenly when brought into contact, and then given circular form. Perfect contact of the edges is essential to insure fit and facilitate soldering, and may be sustained by first *overlapping* and then bringing them back into direct contact. (Fig. 62.) This procedure condenses the molecules sufficiently to overcome the expansion, when heated, that would otherwise cause a separation, and is preferable to wir-

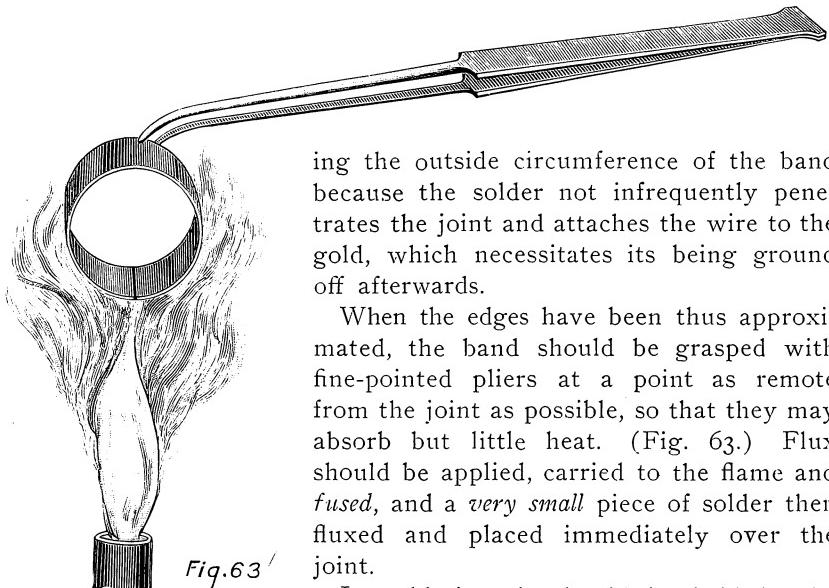


Fig. 63 /

ing the outside circumference of the band because the solder not infrequently penetrates the joint and attaches the wire to the gold, which necessitates its being ground off afterwards.

When the edges have been thus approximated, the band should be grasped with fine-pointed pliers at a point as remote from the joint as possible, so that they may absorb but little heat. (Fig. 63.) Flux should be applied, carried to the flame and fused, and a *very small* piece of solder then fluxed and placed immediately over the joint.

In soldering, it should be held in the flame so that each edge will be uniformly heated, because if either should receive a preponderance of heat the solder would become attached to it, and the addition of a second piece may be necessary. Any more solder than is required to make the joint is objectionable because of the additional stiffness rendered to the band.

As it is desirable to begin with a high grade of solder to prevent subsequent re-fusing, and to admit of finishing with as high a karat as possible, all bands should usually be united with 22 karat solder, though 20 karat will answer the purpose.

For convenience and comfort, the pliers used to hold the work in the flame should possess a long handle and thin tapering points. (Fig. 64.) The addition of platinum points, which may be easily attached with any

hard solder, increases their usefulness, as such pliers absorb less heat, retain their shape more permanently, and offer more resistance to the attachment of solder.

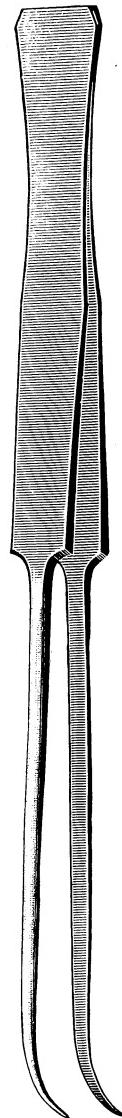


Fig. 64.

A detailed description of the instrument in Fig. 64 is provided in the accompanying text, which discusses the fitting of a band to a root. The instrument is a dental banding plier, used for shaping and trimming metal bands around teeth roots.

The fitting of the band may be made accurate, easy and devoid of dis-

comfiture, in proportion to the relation it bears to the shape of the root and to the outline of its surrounding tissue, *before any attempt is made to adjust it*. The detail of requirements in this connection apply to any style of crown with a band, and are,

First—To conform the band to the general shape and outline of the root.

Second—To trim the edge which is to pass beneath the tissue to *closely follow* the cervical curvature of the process, and gingival festoon of the gum, so that it will come in contact *evenly* and *uniformly* at all points, before the final necessary pressure is applied.

Third—To *round* and *smooth* the edge so that no irritating influence will be offered in forcing it beneath the gum.

Fourth—For the purpose of convenience and of avoiding any confusion in *adjusting* and *readjusting*; because the usual convexity of roots at this point facilitates the adaptation of the stiffened portion of the band, and because of placing the soldered joint where it will be least conspicuous in case of subsequent discoloration, as well as being most easily accessible for reinforcement in the assemblage of bridgework, the joint in the band should *always* be placed at the *center* of the *lingual surface* of the root.

A neglect of any of these most essential features adds materially to the difficulties experienced in, and the possible discomfitures resultant from, the operation. In observing them the band should be gently placed over the projecting end of the root, and shaped with pliers until it is made to conform to its general outline, and any existing concavities or inequalities. Its surfaces should be made perpendicular, and the edge then carefully trimmed with curved pointed shears until it meets the gum line *evenly* at all points; and then nicely *rounded* from the outer surface with a fine half-round file, until blunt but smooth. This minimizes the possibilities of irritation, without obtaining any appreciable thinness of the gold, which would be objectionable because of increasing the liabilities of stretching and irritation.

When these requirements have been complied with, the band should be placed upon the root, and gently pressed to place until the edge passes *just freely* beneath the tissue. For this purpose a small piece of wood of convenient size, with flat, smooth surfaces, is most useful; and if properly used greatly facilitates the operation, and obviates the *driving* of a band into place, which is entirely unnecessary, and even *brutal*.

In instances where a recession of the gingival border of the gum may have exposed the root beyond the normal outline at some point, such as is not infrequently found to present in the mesio-buccal and lingual roots of upper molars, an extension to the band may be indicated in preference to sacrificing it upon other surfaces sufficiently to admit of thus approaching the gum at this point. This may be best accomplished by first fitting the band accurately without regard to this extension, after which a small

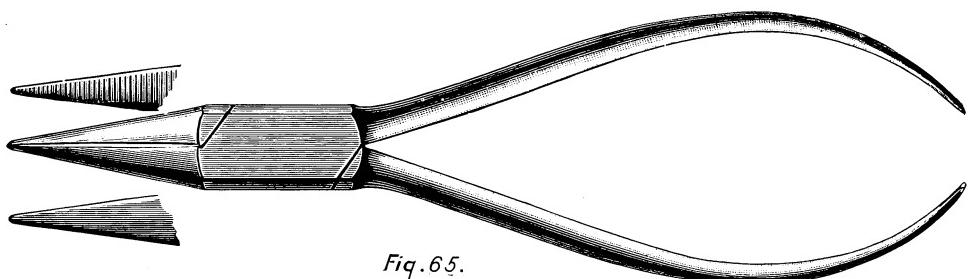


Fig. 65.

piece of pure gold plate may be soldered to the outer surface of the band, and then trimmed until this denuded portion of the root is covered. When the necessary burnishing has been completed, the adaptation may be sustained by re-enforcing the extension with a high grade of solder.

When the cervical adaptation has been completed, the occlusal edge should be trimmed to afford accommodation for the adjustment of a cusp of uniform and sufficient depth, and then filed smooth and contoured.

The entire artistic effect of the finished crown, **Contouring.** as well as the prerequisites of contact and alignment, depends in a great measure upon the form and shape given to the occlusal end of the band, which can be *best* observed at this time.

By *contouring* is meant the reproduction of the natural form and outline of the tooth, and while such may be accomplished with solder, after the cusps have been united, much time, energy and material can be saved, and far more artistic results obtained, by properly shaping the band itself.

Artistic results in this connection, however, are made possible only by a thorough knowledge of the angles, characteristics and general form of the natural teeth; the outlines of which should be reproduced in this edge of the band. This may be done irrespective of the necessary shape of the cervical edge in its adaptation to the root, and without change of it.

For contouring purposes various styles and designs of pliers are used, but as the shaping should be done upon the edge of the band, before the cusp is attached, all of the necessary and artistic results may be easily accomplished with pliers, the beaks of which are straight, tapering, and come closely together, with rounded edges. A design of the author's for this purpose and for universal use in crown work is illustrated in Fig. 65, and, while some of the numerous other designs may be found occasionally useful, these will meet the general requirements, when properly used. The rounded edges and one smooth beak prevent defacing the gold, while the flat surfaces and one serrated beak, and the tapering form for stretching, adds to their general usefulness.

(*To be continued.*)





Painless Dentistry.

By W. ST. GEORGE ELLIOTT, D.D.S., New York.

Read before the New Jersey State Dental Society at Asbury Park, July, 1901.

One of the principal reasons why people neglect their teeth is the fact that the operations that may be required will be painful. In some cases they cannot be induced to take the step which their own better judgment would dictate. I remember meeting a Russian physician in the far East, who was so afraid of dental operations that he had attempted to fill a cavity in his upper central with gutta percha. As the two centrals separated and the gutta percha fell out, he would put in a larger piece until the teeth were so separated that there was room for another tooth between, and yet I could not induce him to have any work done. Judging from what we hear at the chair, there must be a great many dentists who are not blessed with much sympathy. I feel confident that they do not intentionally hurt their patients. They are so interested in the work in hand, so desirous of making a first-class operation that they forget that the best possible work may drive the patient away for years, on account of the pain (often unnecessary), that has been inflicted.

Dentistry is made up of little things, little points in operating, little points in personal manners. A brusque style of reception and a rough style of operating are often the concomitants of painful dentistry. On the other hand, a quiet, pleasant manner and extreme gentleness of touch, are amply appreciated by our patrons. At the same time we must not forget that our work must be well done, our operations thorough. Poor work will banish our patients from us, be you ever so gentle. There is no necessary relationship between gentleness and poor work.

Accepting the fact that painless dentistry is a desirable thing, how shall we attain it?

First, by gentleness in operating.

Second, by the use of proper and sharp instruments.

Third, by absolute dryness.

Fourth, by various medicaments.

Gentleness.

These four points are placed in the order of their importance. In regard to the first, consideration for the patient would teach us, that we can combine with gentleness, wisdom as to where we shall excavate. The removal of softened dentine is not generally painful, particularly if the cavity is thoroughly dried. It is cutting grooves, pits or starting points to anchor the filling that are so trying. It is not always necessary to cut where we find a sensitive spot. Move your drill, try to find a place that is not sensitive. Should a cavity be very sensitive all over the surface wisdom would dictate that it be filled with oxy-phosphate to last for a year or two, when you may be able to do all the cutting that may be required.

The second point is one I attach much impor-

Sharp Instruments.

tance to. The instruments should be the proper kind and absolutely sharp. By the proper kind I mean they should be fine cut, and the burs should have a large number of blades. Vibration is one of the principle causes of pain or discomfort, as a coarse bur is far more disagreeable than a fine one. The ordinary cavity burs supplied by the depots, are much too coarse. I find it an advantage to make my own burs, or at least a large part of them. They generally stand in coarseness between a cavity and finishing bur of the shops. The fineness of a bur should be governed by the hardness of the material to be cut. As we generally do not wish to change one instrument in opening up a cavity more than is necessary, I find a compromise the most useful. There is another objection to the burs of the depots; not only are they too coarse, but they are cut (the blades) at too sharp an angle. No qualified mechanic would attempt to cut stone with a tool sharpened to the angle used on a bur, but might do so were he cutting hard wood. The angle for cutting steel is about sixty degrees, while for wood it is fifteen. If I am sharpening a coarse bur, I try and remedy this defect by changing the angle at the edge of the blade when sharpening it.

This brings me to the main point in this paper.

Sharpening One's Own Engine Burs. the desirability and practicability of sharpening your own burs. The original suggestion came from Dr. Bonwill, in 1876, and the system is doubtless used by some manufacturers in resharpening burs.

A suitable disk mounted in the engine, preferably an electric engine, and a watchmaker's eye glass form all the equipment necessary. The bur is held between the thumb and index finger of the left hand and slowly rotated as each blade is gone over by the rotating disk held in the right hand. The actual time taken to sharpen an average bur is about three to the minute. I make it a rule to never use a bur the second time without sharpening.

**How to Make
Burs.**

It is a desirable thing to be able to make your own burs, as there are many shapes, sizes and lengths that are not to be had at the depots. In this purpose it is a necessity to have a small watchmaker's lathe.

This with Stubs wire No. 42 gives you the means and material for any ordinary bur. After the blank bur is made, it is rubbed on a file of the desired degree of fineness, rubbed parallel with the teeth of the file as you rotate it. This marks out the blades. The bur is then hardened. I draw the temper of all bought burs and harden them as hard as fire and water will make them. After hardening, the bur is sharpened, as previously described. After an experience of some years using vulcanite and corundum, shellac and corundum, Arkansas stone, copper disks fed with carborundum and vaseline, none compare with the ruby gem. The disk is about one inch in diameter, thin and cone shaped, the base of the cone toward the hand piece. These disks can be readily turned and given the proper angle at the edge, by holding against the rapidly revolving disk, a coarse carborundum wheel or broken bit. Another excellent plan is to use a steel disk, the teeth formed by rubbing on a very fine file and then hardening. This gives a sharper, cleaner blade to the bur than the ruby gem, but has the disadvantage that the bur to be sharpened must be soft, have the temper drawn, while this is not necessary with the stone disk.

There are times when the drill point of the revelation bur is a desirable feature, but generally I much prefer a drill. This leads me to remark that I doubt if the value of drills in opening up work is fully appreciated. Most of my work is done by this means, generally the smallest size fissure drill, cross cut, hardened and sharpened to a chisel point, and resharpened every time it is used.

**Rubber Dam
Not Always
Necessary.**

There is a strong dislike on the part of some patients to the rubber dam. Allow me to enter a plea for the sensitive ones. I believe the dam is seldom necessary for plastic work, and not always for gold, although, generally, for soft gold, tin and gold and the plastics, absorbent rolls are quite sufficient. This reminds me that the virtues of tin and gold are not appreciated in this country. It can be introduced quicker than you can mix the amalgam. Water does not injure it. The filling undergoes a change, becomes dark and hard, and seldom leaves the cavity. Of course its use is largely limited to simple cavities.

Obtunding.

Dryness stands third as a relieving agent, whether used with zinc chloride or not. It is a good plan to isolate the tooth by a small piece of rubber

dam as the process of obtunding generally takes time. Dry thoroughly, then soak in cocaine with ether or chloroform, and allow it to remain five minutes. Or use cataphoreses, where this agent can be used. It is most useful, but as you cannot always tell where the current will go, there is an element of uncertainty about it. Personally I use it more for sterilizing roots than as an obtunder.

Prophylactic treatment offers an interesting field for experiment, and some success has been met with, but so little has been done, and that little empirical that we have but few facts to help us. One grain of opium administered one hour before the operation or one-half grain of opium with five drops of the tincture of aconite root are useful. Coal tar derivatives are also good, particularly antifebrin in grain doses.

When practising in Japan, before the days of cocaine, I used with much satisfaction chloroform, allowing the patient to take the small bottle and sniff the vapor through the nose. Its first effect, that of relieving sensitiveness is realized in a few minutes, and lasts after the bottle is taken away an equal time. It is not desirable to let the patient get fully under the drug. One patient was so sensitive to its influence that one or two inhalations would put the patient quite under.

Suggestion has been used, it is said, with success. Personally I have never found it of value. Christian science should, if its doctrines are true, give complete immunity from pain, but I have heard of no success in this way. Neither have I found much help by abstracting the attention. I have used for three or four years the phonograph at times daily, but more with a view of distracting the patient's attention while undergoing the disagreeable grinding than relieving pain.





New Jersey State Dental Society.

Thirty-First Annual Meeting, Wednesday, July 17, 1901—Evening Session.

Discussion of Dr. Elliott's Paper.

**Dr. F. G. Gregory,
Newark, N. J.**

There is one point that Doctor Elliott brought out that I thought of very great importance, that is the bur being fine cut, having many blades, and reducing the vibrations in proportion to the number of blades added. That has been the trouble I have had to contend with. I am not capable, as is Dr. Elliott, of sharpening my own burs. I only wish that I might have an opportunity of seeing him do it. If he would give a clinic on that tomorrow afternoon we should be well repaid.

There is a factor which enters into our operations that Dr. Elliott has not touched upon, one that contributes largely to the comfort of our patients, and that is the dentist submitting himself to operations in his own mouth. After having some work done upon my own mouth I am generally very careful with my patients and it contributes in a very large degree to the comfort and satisfaction the patient will receive at my hands.

**Dr. H. W. Northrop,
New York.** Permit me to compliment the essayist upon his most excellent paper. When I saw the title of it, I was quite anxious to know on what line he was going to dwell, because we see in the newspapers a great deal about painless dentistry, but it is quite evident that those references are not on the line of Dr. Elliott's paper.

It has often occurred to me, from what patients have said in the chair, that they have been unnecessarily hurt and I believe it depends more upon the manipulation of the operator in making an operation painless, or as much so as possible, than it does on the sensitiveness of the tooth. The first thing some operators seem to try to do is to find out

where the nerve is, and after they find it they want to be sure they are right, while, as Dr. Elliott says, when they find a sensitive spot they should endeavor to find another that is not so sensitive. Sometimes this would be of a great deal more benefit to the patient and they would be far more apt to see their patients a second time.

Dr. Elliott and I agree upon some things and

Dr. J. Allen Osmun, there are some things we disagree about.

Newark, N. J. He touched upon an old hobby of mine that I have brought before the society from time to time and exploited and enlarged upon; that is the subject of sharp instruments.

Painless dentistry is in many cases largely a matter of imagination. Dr. Gregory says that we should submit ourselves occasionally to an operation. There are several gentlemen in this room who have operated upon me and I have never found that I have suffered so very much at their hands. I have attributed this to the fact that I knew what was coming; I knew what was to be done and had no apprehension whatever; besides that I had perfect confidence in the gentlemen operating, and I did not suffer to any appreciable extent.

Dr. Elliott speaks in his paper of using drills for opening up a cavity. Personally I think that is a mighty good way of getting a tremendous lot of vibration, and if it is true, as he stated, that vibration causes pain, I think we should not use the drills. I prefer to use small discs or small stones, which I keep thoroughly wet with a stream of water. By that method I can perform the operation almost invariably without pain. If there is pain it is almost always because my assistant has not put enough water on or I have allowed the engine to run too fast and have got too much friction. Not only that, but I make a nice smooth, even margin, and with scarcely any vibration.

Dr. Elliott also speaks of the use of rubber dam and I take it he is not fully in sympathy with its use. I think a more beneficent thing has never been given to the profession for the advantage of the dentist and the excellence of his work, and I think it should be applied almost invariably. But there is a way of putting on a rubber dam that is painful, and one that is not painful. In using it we get the dryness of the cavity and the dentist can go on and work with small stones without vibration or jar and therefore free from pain; he can see exactly what he is doing, and can avoid finding the nerve; he can find a place that is not sensitive.

The great point in operating painlessly is to have sharp instruments. I heartily agree with Dr. Elliott concerning that; I believe it is the fundamental principle of painless dentistry and will beat all the obtundents that have been invented up to the present time, including cocaine and cataphoresis.

Have sharp tools, a steady hand and the confidence of your patient and you will carry them through with very little pain and with honor to your profession.

I want to enlarge for a moment on the subject

Dr. G. G. Maynard, of having the confidence of your patient. If there **Englewood, N. J.** is anyone in the world it is difficult to work for, it is a patient who *expects* to be hurt; you may appreciate that particularly if you are working with a child, and especially one who has been deceived by someone else by being told he was not going to be hurt. If you make it a rule to never intentionally deceive, you will secure the confidence of your patients. We most of us know when an operation is going to hurt and should tell our patients we expect to hurt them for a second, but will be as careful as possible, and when we are not going to hurt them we should tell them so—and then be mighty careful that we do not. By that means our patients will learn to have confidence in us and to remain perfectly quiet when we are not going to hurt them, and when we are, will brace themselves to stand it and will not suffer one-half so much as otherwise.

Nine-tenths of the trouble arises more from dread than from actual pain. I do not mean to say we do not hurt our patients, I know we do. I have had experience at both ends of the instrument, but I think every dentist will agree with me that a large part of the trouble arises from dread and if we can gain the confidence of our patients so that they will know when we are really going to hurt them, we will have gone a long way towards success.

I want to bring out the point of telling a patient

Dr. Harvey Tredell, beforehand whether or not he will be hurt. It was **New Brunswick, N. J.** my fortune when I first began to practice to have that very strongly impressed upon my mind. The little patient came in with a very loose temporary tooth which was hanging by a loose membrane. He was very nervous, but I told him I would not hurt him, that I would look at it but not take it out. My intention was not to take it out, but it was so tempting that I thought I would give it a push and out it came. The little fellow jumped up and said: "You told me a lie!" and I never saw him again. That was a lesson to me, and I have made it a rule ever since to tell my patients when I am going to hurt them and when I am not going to hurt them to tell them so, so that they may rest easy. I do not believe in deceiving patients in any way and specially little ones.

The paper enunciated two principles in painless

Dr. W. G. Chase, dentistry, those of sharp instruments and care, and **Philadelphia.** the discussion has brought out another point, that of the confidence of the patient in the operator. I think

the latter has more to do with the subject than the former; still they go hand in hand.

I call to mind a patient of mine; the first time she came to my office she said: "I am very nervous; I feel sure I am going to be terribly hurt." I told her "I think, I am sure in fact, that you are mistaken; I am not going to hurt you very much, certainly not more than I can help. I will be just as gentle as I can, and if I hurt you in the least bit all you have to do is to raise your hand and I will instantly stop." She said: "I was scared very badly a short time ago by having a rubber dam put on; I felt as though I was going to smother." I said "That is unnecessary; let me put it on and if you are not satisfied that I should go on, I will then take it off." She replied: "All right, under those conditions I will allow you to go ahead." She did not have me take that rubber dam off nor did she ask me to stop for the simple reason she believed I would do as I said. I make it a rule never to tell any patient a falsehood, or even the pretense of one if I can possibly help it. I will tell him whether it will hurt or not and I always insist upon him letting me know if I hurt too much and I never yet had a patient tell me to stop.

All these other things are very good in their place and there are times when cataphoresis has been good, but we all know how long it takes to put the patient thoroughly under the influence of cocaine by the electric current.

I notice the gentleman has also spoken of suggestion. Suggestion, no doubt, has its place. Undoubtedly if each dentist were able to put his patients under mesmeric influence he would be able to keep them from feeling any pain, but it is a hard matter to get any patient to submit to any such proceeding. They do not seem to have quite enough confidence in you to allow themselves to be put into what is almost a cataleptic state. If they would, it would doubtless do away with a great deal of the dread of the operation. But unfortunately it is a hard matter and almost impossible to mesmerize patients without their consent, their willingness to submit; it requires concentration of thought and so on to follow it out.

I would like to warn the profession against the
Dr. Luckey, administration of medicine systemically for the
Paterson, N. J. reduction of pain. I think when we do that we go

beyond the bounds of dentistry, and invade the field of medicine. While the law may protect us, I think we are doing that which ethically and properly, and in every other sense, we ought not to do. We have in our hands as dentists the means of performing our operations in such a way as to be to the benefit and satisfaction of a patient with the least amount of pain possible. I believe in the use of a steady hand, a clear head, and sharp instruments, and I believe they are the best

known means of securing painless dentistry. Added to that is the proper use of preparations of cocaine that can be applied and taken up by the soft tissues, which will reduce the pain, so much so indeed that there are few patients where the pain can be controlled at all, that cannot be controlled in that way, and the operation be satisfactorily performed.

A good deal has been said by some of the speakers as to "suggestion" to the patient concerning the pain, and I began to wonder if I were in a Christian Science meeting or in a community of practical dentists. Some of the speakers seem to think one can make the patient believe he is not suffering pain, when, as a matter of fact, he is being hurt. I think we are all inclined to do that. We find so many people who do not respond to the contact of the instrument that we believe those who do are perhaps putting it on a little bit, and they are not so patient as they ought to be. In those cases the application of even a little creosote, if one has nothing better, and perhaps a little "auto suggestion," will accomplish a great deal that medication might not do. Sharp instruments are also necessary, and I do not believe it is necessary for us to pay much attention to the ancient methods of dentistry, such as the making of instruments for our own use. I do not think it is necessary for the present day dentist to know much about that, for their manufacture has been made so perfect, and they can be acquired with such ease and cheapness that it makes it almost unnecessary for us to spend our time in that way, when it is so much more useful to suffering humanity and our own bank accounts.

It seems to me that the statement made by Dr. Luckey is unfortunate for the dental profession. I should be very sorry if we, as dentists, thought we were not capable of occasionally administering medicines internally. (Applause.) I should think we were then decidedly below the physician, when I think that in many instances we are superior. I should like to know what Dr. Luckey would do when an abscess is forming, and has gotten beyond his control; would he refuse to give that patient morphia during the night in order that the drug itself might reduce the inflammation and give the patient temporary relief until the abscess should have passed the acute stage? I would like to know what dentist, if he saw a child coming into his office, who required a course of regulating, would refuse to give it the tonics necessary to prepare it for proper treatment? It seems to me that we are the people of all the people who could judge of the medicines necessary to be given to our patients, and I for one should be very unwilling to say to a physician, "Will you kindly please give my patient some such medicine as you think is good for him." No, he is to take the medicine I recommend, and if the physician does

**Dr. Head,
Philadelphia.**

not like that medicine, and will not consult with me, then I prefer to have that patient go to some dentist who is more subservient to the physician, for I, for one, will never be subservient to the general practitioner. I, as regards dentistry, am his superior, and I wish him to understand it.

There was one point brought up this evening that was interesting from the point of reminiscence. Dr. Elliott spoke of Dr. Bonwill's method of sharpening burs. It was very interesting to me because I have heard Dr. Bonwill give his description. No one has a greater respect for Dr. Bonwill than I, and I take off my hat to him, in spirit land, and I do hope and pray—because it would hurt his feelings—that he is not listening now! I have had a number of Dr. Bonwill's patients, and they have told me almost universally that he used dull burs; that his burs did not cut. I was very much interested in that statement because he always told me that he sharpened his burs himself, and in a very few minutes. I have taken a course in bur sharpening, and have seen the spiral burs sharpened and have had pretty good results, but I cannot begin to do expert work, such as is done by the men who are doing it all day long, and I am a fair mechanic, too. One of those men will take the bur, and in some peculiar way apply a fine, sharp saw to it, put in a little turning instrument and saw and saw and saw, and after it is done you look at it through the glass and see a beautiful spiral going regularly all the way down, but when you come to do it, and look at the results through the glass, you see something very different.

Dr. Elliott spoke on the subject of tempering burs. The ivory spiral leaf burs are in my opinion the finest in existence. I have seen them tempered. They are made cherry red and plunged into the fluid, then the head of the bur that is to be used for cutting is taken in the pliers, and absolutely protected from the flame, while the blueing process goes on up to the head and it is plunged into the water, but the cutting surface of that bur is as hard as steel can possibly be made.

I do not know if Dr. Elliott has had better success with stub steel, but there is an instrument maker in Philadelphia who thought he would make a set of excavators specially fine for a friend and he got stub steel and had it turned down and ground down and made into excavators, and they didn't begin to do the work that the ordinary softer steel ones do that we dentists from long experience have found best suited for our purpose. Stub steel, and the steel used ordinarily in dentistry, are very different, and I think the difference has arisen from the needs of dentistry and not from the fact that the dental manufacturers are not ready enough to buy stub steel. (Applause.)

If there is anything I love next to my family, Dr. Luckey. it is my profession, and I should be very sorry to say anything that is unfortunate for it, but with all due respect to the gentleman from Philadelphia, I want to sound again the warning that I gave out. We are not educated to give constitutional treatment, and are not expected to do it, and if we do, might make mistakes that would cause us sorrow all the rest of our days. What would you think of a physician who would undertake to treat diseased conditions of the mouth? Yet we dentists, with a three years course of education, one year less than that of the medical profession—we who do not stand on their level, let us sound our horn as we will—propose to go on and administer these remedies. To stimulate the body and strengthen the nerves is a very little thing to do, and we may come out all right, but the result in case of mistake may be serious, and I want to again emphasize the warning. When you feel like doing it, please don't do it.

Something that Dr. Luckey has said seems to Dr. Head. me to need explanation. He says that we are not as broadly educated as the medical practitioner. That may be so, but let me call your attention to what President Elliott of Harvard College said only a few years ago. President Elliott said that it was an unfortunate thing that medical students were permitted, at the end of a four years' course of study to practice medicine generally, when as a matter of fact, the entire scope of medical knowledge would require from twenty-five to twenty-eight years study to be learned thoroughly, and, therefore, if justice was to be done the patients, it was becoming more and more necessary that the medical profession should be divided into specialties. So, in spite of the objections that are raised, I do deem, and have felt, and many of us feel, that we are specialists in medicine; that we are absolutely in the ranks of medical men, and that the time is soon coming and is almost upon us, when the spectacle will be presented to the world of dentistry, a specialty of medicine, taking four years to learn while the general practitioner of medicine will take no more time to learn its entire medical scope. Is the dentist who takes three or four years' study in order to practice his specialty, not better prepared to give help in that specialty than the general practitioner who takes but four years to study the entire system of medicine which experience has shown will take at least from twenty-five to twenty-eight years to thoroughly understand? (Applause.)

The strong point I desired to make in my paper Dr. Elliott. was this: I believe it is absolutely impossible for us to use burs a second time and have the burs in good condition. How many of you gentlemen would put aside a bur that you

have used but once? Yet that is what I claim our duty to our patient requires us to do in order to make the operation as painless as possible. I got the idea from Dr. Bonwill away back in 1876. He then used a mixture of corundum and rubber, which by the way is perfectly worthless for the purpose of sharpening burs. I have used a half a dozen different things and found them all unsatisfactory. The best thing I have found is what is called the Ruby Gem, made in Worcester, Massachusetts. The time actually taken in sharpening a bur is less than half a minute, and you can sharpen all the burs you have used in a day and make them absolutely sharp in five or ten minutes.

Another thing, you cannot buy the shape and size and length of burs that you wish; it is impossible. How can you get them unless you make them yourself? One of the gentlemen said it was much more desirable to buy one's burs than to take the time from one's business to make them. I have probably as large a practice as most of you gentlemen, and I have plenty of time for that and for a great many other things, I do not indulge in billiards or horse racing or anything of that sort; I devote most of my time to my profession and find that I have plenty of time to do almost anything I desire to. It is perfectly easy to make a bur sharp, and in so doing you have no idea the amount of comfort you will give your patient.

We have the honor of having present with us to-night a gentleman, who, although not a dentist, is very much interested in dental matters, and I take great pleasure in introducing to you Mr. Paul R. de Amaial, Charge d'Affairs of the Brazilian Government at Washington, D. C., who will now address you.

Mr. de Amaial. It is a pretty hard task to speak in a foreign language, no matter how well acquainted with it, which, by the way, is not my case. So I will just endeavor to convey to you my sincere gratitude for the honor of addressing you and the pleasure it affords me of being present at your meeting tonight. I wish to express my sincere wishes for your prosperity and personal welfare and the success of your society. (Loud applause.)

President Riley. Before we adjourn tonight I wish to call your attention to the fact that the clinic committee desire the use of this room not later than eleven or eleven thirty tomorrow morning and therefore our session will begin promptly at nine o'clock.

On motion adjourned until Thursday, July 18, 1901, at nine o'clock a. m.

Convention of the National Dental Association.

Reported by R. C. BROPHY, M.D., D.D.S.

The fourth annual meeting of the National Dental Association was held at Milwaukee, Wis., on August 6, 7, 8 and 9, 1901. About five hundred dentists were in attendance and a large number of ladies added charm to the occasion made propitious of general enjoyment by splendid local arrangements, excellent hotel accommodations and most delightful weather. The meeting was called to order by President G. V. Black, and after invocation had been rendered by Dr. Edmund Noyes, of Chicago, Chairman Burkhart, of the Executive Committee, announced the programme of the first session.

With Vice-President Finley in the chair, President Black delivered his address. He reviewed the association's history from its inception (under the title of the American Dental Society) in 1859, called

President's Address. attention to the desirability of revising organization and methods of operation to adapt it to developing needs, deplored the indifference shown by State societies in failing to send official representatives to the National Conventions, and suggested that any State association neglecting to send delegates two years in succession be dropped from the National body. All members of State associations should be presented with annual reports of the National society, through the State societies and at their expense. The strictness of censorship of papers in the National Conventions was condemned on the ground that all papers are of interest to some. More deliberate and thoughtful work in discussing papers was urged. President Black condensed his recommendations at his close under four brief heads, as follows:

First—Though the present constitution may have been well adapted to our needs, in my opinion, we have outgrown our present plans of work, and they should be improved.

Second—Our business methods should retain their present form, but be improved by expressing more definitely the duties of the several officers.

Third—Our present plans of doing all of our literary and scientific work in general sessions should be abolished and the work divided into distinct sections presided over by officers elected annually by the general sessions.

Fourth—to place the formation of the programme for each session definitely in the hands of our committee with subdivisions to represent the sections, so that the responsibility for this important work will be definite.

Upon motion the President's address was referred to a committee of

three, and Drs. Taft, Truman and Morgan were named as constituting such committee.

**Dr. Patterson's
Report.**

Section Four.

The report of Chairman J. D. Patterson of Section IV. covered very comprehensively later developments, and most advanced thought in the fields of Physiology, Etiology, Hygiene, Prophylaxis and Electricity. More particular attention was paid, however to the subject of Etiology of dental caries, and pyorrhœa alveolaris. Original deductions were generously interspersed with quotations from acknowledged authorities, Michael's theory of causation of caries being particularly quoted. Discussion of the report was opened by Dr. C. N. Peirce, who, in addition to bacteriological theories, discussed other causes of decalcification and breaking down of tooth structure, as age, non-secretion of lime salts, calculus, etc. Dr. W. C. Barrett argued that as the physician studies urine the dentist should study saliva; that saliva undergoes different chemical changes, and that through these changes different species of bacteria may be induced to modify their operation, and may produce the same pathological results. He said he believed that no specific microbe of caries exists, but that any variety may attack the teeth if the chemical condition of the oral secretions is favorable.

**Pyorrhœa
Alveolaris.**

Some attention was given in the discussion to pyorrhœa alveolaris. Dr. Eugene S. Talbot, in his discussion of this disease, denounced the term pyorrhœa alveolaris in its application to this condition, specifically on the ground that the disease may exist for years without pus formation. Interstitial gingivitis, in his opinion, is the correct title to give the disease. In reference to the etiology and cure of the disease, he holds to the belief that it is of constitutional origin; that it has its incipiency within the osseous structure of the alveolar process, and that it follows if it is of constitutional origin constitutional treatment must be employed to effect permanent cure.

**Dr. Hungerford's
Paper.**

The most prominent paper perhaps of this section was read by Dr. C. L. Hungerford, of Kansas City, under the title, "An Enquiry into the Etiology of Disease." The paper was a condensed abstract of the idea held by the essayist that man is the maker of what we call nature and that all conditions (health or disease) of nature are the result of his thought. To the listener to the discussion of this paper with a humorous perception, it was decidedly interesting. The paper was a deeply scientific one, so scientific, in fact, that it was plainly not comprehended by some of the gentlemen who were so unfortunate as to undertake to discuss it. One of the most learned members of the profession from the East when called

upon to discuss it confessed that it was so metaphysical that he was all at sea. Others, evidently taking it for granted that the writer of the paper was an advocate of "Suggestion" as an efficient cure of physical ills, related miraculous results of its application in their experiences. In fact, the discussion was practically confined to pros and cons of the occult powers of man in preventing and combating disease. The closing of the essayist embodied a vigorous protest against his paper being construed as dealing with the preposterous ideas dwelt upon by some of the gentlemen in the discussion.

**Section Five.
Antral Disease.
Dr. Logan.**

Under Section V., embracing Anatomy, Pathology and Surgery, Dr. Wm. H. G. Logan, of Chicago, read a paper, entitled "Diagnosis and Treatment of Empyema of the Maxillary Sinus." This paper was illustrated by the use of the stereopticon. The essay-

ist advocated the making of a buccal opening into the antrum at a point above the first and second molars, and that the opening be large enough to admit freely of ocular examination of the cavity. To maintain this opening a gutta-percha plug is constructed which fits it nicely, and has a flange upon its superior, buccal border tending to aid in its retention through pressure upon it of the cheek, a groove being provided along its inferior surface to allow drainage of secretions. Should it be found that the plug was untenable in position in the opening, then retention was suggested by placing a band around a tooth, if present, and soldering a bar thereto, to be passed against, or into the plug.

The objection the essayist made to the operation of effecting an entrance through the canine fossa was that such opening enters the antrum too high up for perfect drainage. Objection was made to extraction of a tooth to effect drainage and irrigation, on the ground not only that it is uncalled for, but that it is an unnecessary sacrifice of teeth, and withal is impracticable for the reason that it is always questionable whether the antrum be entered at a point which effects perfect drainage.

This argument was effectively supported by the essayist through presenting a series of slides showing the antrum to be extremely variable both in form and position. The advantage of making a large opening buccally admits of ocular inspection of the cavity and positive instrumentation within it, if called for.

"The Incisor and the Profile" was the subject of a paper by Dr. C. L. Goddard. The essayist briefly considered comparative anatomy pertaining to the effects of deformities of the human jaw, and irregularities of the human teeth upon facial contour.

This paper was highly appreciated as a comprehensive commentary

upon the dentist's duties to humanity in promoting correct outlines of the profile and features through inducing proper position of the teeth.

A paper by Dr. W. C. Barrett upon "Method of

**Dr. Barrett
on Implantation.** Attachment in Implantation" provoked very wide discussion and evidenced a wide variance of opinion on the subject. The theory which seemed to be most

generally indorsed, however, is that there is no true physiological union; that homogenousness of bone and cementum is lacking; that their direct union is, therefore, impossible; that new osseous tissue must be formed, and that in order that new osseous tissue be formed the physiological function of the pericementum must maintain; that while it is possible that immediate replanting may be followed by re-establishment of physiological action of the tissues and their reunion, destruction of vitality of the pericementum precludes the possibility of retention otherwise than mechanically.

Dr. John S. Marshall, President of the Dental Board of the United States Army, acting under instruction of the Surgeon General, appeared before

**Dentists
in the Army.** the convention and read a paper dealing with the work of his board. The paper, entitled "The Organ-

Dr. Marshall. ization of the Dental Corps of the United States Army with Some Suggestions upon the Educational Requirements for the Service," was a detailed report to the profession of the existing status of dental development in the army under the new law, and as such is of much interest. Dr. Marshall said: According to the provisions of the army reorganization bill the number of dental surgeons to be employed in the army was but thirty—a number so small as to make it by far the hardest worked branch of the medical service. The bill provides that free dental service can only be rendered to the officers and enlisted men of the regular and volunteer armies while the army regulations fix the hours of service at 9 a. m. to 4 p. m. During these hours the dental surgeon is expected to devote his entire time and attention to the care of those persons who are entitled by law to his services, except in cases of emergency; but after these hours he may attend the civilian attaches and others who may request treatment, and for which he is permitted to charge a regular fee. He is, however, required by a special rule of the Surgeon General to state upon the monthly report how many civilians he had treated during the month. It is the opinion of Dr. Marshall that if the corps becomes a permanent organization, as is hoped, the courtesy of free dental service will be extended to the families of the officers and enlisted men, just as is now the case with medical and surgical treatment, and he will recommend such ruling on the ground that it will induce higher efficiency in the corps. "I have been

assured by scores of the officers of the regular army whom I have met in Washington," said Dr. Marshall, "that our corps will be most cordially welcomed wherever they may be sent; especially is dire need of dental service experienced in Cuba, Porto Rico and the Philippines." Much encouragement is felt by Dr. Marshall that not much time will elapse before the dental attache of the army will become a commissioned officer, though he says that two things must be demonstrated before it is likely that Congress will pass favorably upon the question of making the dental corps permanent, and those are, "Is it essential to the health and efficiency of the army," and "Does it pay in dollars and cents?" We must demonstrate, he says, that by having dental surgeons with the army much loss of service will be prevented by reason of incapacity for duty resulting from dental and oral diseases.

Touching upon educational requirements for service in the army, Dr. Marshall said, "By reason of his military surroundings and the isolated position in which he will often find himself professionally, the army dentist will need to be broadly educated, and so expert in his profession that he will be capable of managing any case that may be presented to him for treatment. It is, therefore, necessary that his general education be upon broad lines, and his professional knowledge as complete as possible in every department of dental practice."

Dr. Marshall recommended that more time should be devoted by the dental colleges to laying the foundations of a broad and comprehensive scientific education, in order that graduates may be thoroughly prepared for army dental practice. He believed that the course should be lengthened to four years and that the entrance standard should be raised. A considerable portion of Dr. Marshall's paper was devoted to a report of the examining and supervising board of dental surgeons which was held commencing February 25.

**Examination
for the Army
Dentists.** The examination covered a period of two weeks, one week being devoted to theoretical subjects and the other to practical work, patients for the clinics coming from the general hospital, Washington barrack and Fort Meyer, while a number of army officers availed themselves of the opportunity to have their teeth treated. Assurance was given at the outset of the examination that no attention would be paid to political pressure should any be brought to bear, and the candidates were passed upon their professional fitness alone. Seventy candidates took the examination, of whom but nineteen were qualified and approved. Five were appointed without examination, as provided in the law, and the total number of dental surgeons now in the army is twenty-seven, this including the three members of the board, who have been or-

dered to the following stations: Dr. J. S. Marshall, President, to Presidio, Cal.; Dr. Robert F. Oliver, to Manila, Philippine Islands, and Dr. Robert W. Morgan, to Havana, Cuba.

Aside from the examination of delegates, the board found much work, said Dr. Marshall, in the selection of the field outfits. It was necessary, because of the difficulty in army transportation, to have the outfits as light in weight as possible. A special chest had to be devised which would hold everything firmly in position. Each outfit consisted in all necessary instruments for operations on the teeth and sufficient supplies for a three months' service. The whole outfit, consisting in two chests, an army field desk, two folding tables and two folding chairs, one of which was specially designed as an operating chair, could be carried nicely on the backs of two mules.

(*To be continued.*)

International Dental Federation: First General Meeting, Held at Cambridge, Eng., 1901.

WEDNESDAY, AUGUST 7TH.*

The first meeting of the Federation was held in the Physiological Theater, University Museums, on the morning of Wednesday, August 7th, when the Federation was welcomed to Cambridge by the deputy vice-chancellor of the university, Sir Michael Foster, M.D., F.R.S., M.P., who said:

Sir Michael
Foster.

The vice-chancellor of the University of Cambridge is, unhappily for us, obliged to be away from the university at this period, and in his absence he has asked me to act as his deputy and to bid a most hearty welcome to this important International Dental

Federation. I understand that its international character is assured by the participation in it of seventeen different countries, and I assure you that this ancient town feels it a compliment that you have chosen it as one, if not the very first, for your visit. The vice-chancellor trusts that your visit here will be both profitable and agreeable; that it will be profitable will rest mainly with yourselves; that it shall be agreeable we have done our best to insure.

**The President,
Dr. Godon.**

Permit me, in the name of my colleagues of the International Dental Federation, to thank the vice-chancellor and the members of the council of the University of Cambridge for the kind hospitality that has been tendered us in these ancient buildings, where generations of students and professors, many of whom have become illustrious, have succeeded one another. No place could be more appropriate for our labors than Trinity College, where the names of Newton, of Roger Bacon, of Macaulay, of Tennyson, of Dryden, and many others present themselves spontaneously to our minds to inspire us and to encourage us in the work of universal union and of international education that we have undertaken.

And no one is better qualified to receive us than Sir Michael Foster,—the learned representative of the vice-chancellor of the university; Sir Michael Foster—the eminent physiologist whose name has become universally famous through his scientific work. He welcomes us today with the same kindness with which, as president of the British Association, he welcomed my countrymen at Dover in 1899. In the name of the Executive Council of the International Dental Federation, and in that of the International Commission of Education, I beg to tender him the sincere expression of our gratitude and respect.

**Sir Michael
Foster.**

The ancient university to which I have just had the pleasure of bidding you welcome, and which numbers among its illustrious men, in addition to the names which your president has mentioned, that of William Harvey, presents somewhat medieval features which are lost to other universities—features medieval, but modified by modern development.

**Origin
of the
University.**

In the earliest days of the university every one who attained the title of Doctor thereby gained the right to teach. He, in those early days, taught in any room he could, in one which he hired for the purpose with his own scanty earnings, or in one which was granted to him by the benevolence of others. His pupils in like manner lived where they could, sometimes in such lodgings as their poor purse could secure, sometimes enjoying the hospitality of benefactors. In the course of time the university became able to make provision for its teachers—if not for all its doctors, at least for those whom after a while it came to speak of as professors. The students, on the other hand, found it to their profit to gather together in common lodgings, which came to be called hostels.

In most countries other than England, while the provision made by

the university for its teachers has enjoyed a large development and all universities have now their lecture theater, their museums, their libraries, their laboratories, and their halls for solemn occasions, the hostels have for the most part been broken up and the students left to shift for themselves. In England, on the other hand, the country having been for centuries secure on the whole from invasion and war's destructive effects, the hostels have flourished more and more. In course of time, after in some instances a temporary connection with religious orders, they have developed into what we here call colleges—*institutions which are hostels in the sense that they afford lodgings for the students, but which do much more than this, in that, over and above what is done by the university, they afford teaching of a very varied kind, and moreover have entered into special relations with the university itself.* Each college, in fact, is in many respects, in Cambridge, a small university within the mother one. Here at Cambridge we have seventeen colleges; in addition to institutions which we consider as and call mere hostels, seventeen small universities having complicated relations with the university itself and carrying out much of the teaching—performing, in fact, almost all university functions save that of giving a degree.

Such a state of things could not help leading to a certain rivalry between the mother and the seventeen daughters. The prosperity of the college was more or less inimical to that of the university, and indeed for many years the university, as distinct from the colleges, somewhat languished. During the last generation or so, however, it has undergone great development and expansion.

You are gathered today in a university which, like its sister university of Oxford, bears more distinctly than do most of the other universities of Europe the stamp of early and medieval times, preserved by the predominance of the colleges. You may recognize this in the direction and respective relations of the studies carried on in the plan. In old times there were three faculties in a university—Theology, Law, and Medicine, corresponding to the three pursuits which demanded at that time book-learning. For the university was founded for practical purposes, and only these three pursuits as yet needed book-learning; the soldier, the merchant, and the manufacturer could do without it. Later on there grew up a faculty of Arts for the protection and advancement of those more general studies which furnished an introduction to the three special practical studies. He who aspired to be a doctor of theology, law, or medicine spent much time in this common learning before he specialized for his profession. In the course of time the colleges took up with vigor this common learning, leaving the more professional studies to the university itself. Moreover, partly from the circumstances of their origin, their

early connection with religious orders, partly from other influences, the colleges, and with the colleges the university, became more and more associated with the church, the Established Church of England. And, indeed, during the early and even the middle part of the past century the university and the colleges seemed to belong to the church. The university became the training-place for nearly all the clergy, and gave them all they needed, while some lawyers only, and even fewer doctors, sought its aid, and received there not a professional, but solely a general education. The last generation has, however, seen great changes. The ties with the church have been loosened, professional studies have been encouraged, and in an increasing manner not clergymen, lawyers, and doctors only, but men of other professions and pursuits—the engineer, the farmer, the man of business and commerce, the manufacturer, and even the soldier—are knocking at its doors and seeking for professional as well as general education.

**Character
of Modern
Education.**

At the present moment you will find this university, like other seats of learning and education, busy with the question, What is the best kind of education for each profession and pursuit?—a question which is also stirring you.

All, I venture to think, are agreed that education should be fashioned after the manner of a cone, starting from a broad basis and narrowing to an apex, for it is the conical bullet that has penetrating powers. In the storm and stress of modern life an all-round education, such as makes a man a mental sphere, is not in itself adequate. Spheres move readily one over the other, and spherical education may be good in society, but it is not suited for a profession. The round ball thrown at a surface may make a hole, but more frequently simply rebounds; whereas the cone may be depended upon to pierce, and the man whose education is conical makes his way.

For each profession the cone should be different, should be fashioned in different ways, though in each case it should start from the same broad basis—namely, the broad basis of the discipline of the school; that is the boy's school. I say discipline rather than the learning of the school, for the aim of the schoolmaster should be in all cases the formation of the mind—the setting of the instrument, not the filling of the bottle. The growth of habits of accuracy, of intentness, and of alertness, this rather than the gathering of mere knowledge of facts is the proper heritage of the school, and for the attainment of these habits it matters not so much what the boy is taught as how he is taught.

From his broad basis of a general school education the narrowing of professional training begins, and we thus come to the question which in-

terests us today; that is, the narrowing of training which is best for the dentist, and how shall it best be brought about? On this it would not be fitting that I should do more than offer a few general reflections.

**Requisites
of Dental
Education.**

The dentist is a healer; his business lies with a very small portion of the human frame, but that portion, though small, is still human; it has its diseases, its failings, and the dentist has to cure these—bringing in, whenever it be possible, the best of cures, prevention. The training of the dentist is, in broad terms, the training of a healer.

I remember that in my young days a celebrated surgeon used to say that a surgeon was a physician and something more, meaning that he had to possess a general knowledge of disease such as the physician possesses, but had, in addition, not only to know certain features of disease which the physicians might neglect, but also to acquire a manual dexterity which the physician never needed. In somewhat the same way we may say that the dentist is a surgeon and something more. He has, like the physician, to possess a general knowledge of disease, and to possess, like the surgeon, a certain skill of hand; but besides this he has to acquire a special manual dexterity never called for in a surgeon, and to possess a special knowledge of metallurgy, of chemico-physics, and of branches of mechanics of which neither the physician nor the surgeon need know anything at all.

All knowledge is useful, but the power of the human mind to attain and retain knowledge is limited. We cannot all know everything. The surgeon need not, and if he is to excel greatly in his art cannot know all the minutiae of the physician's calling; he cannot at once be an accomplished surgeon and complete master of all the details of auscultation and the intricacies of neural pathology. In like manner the dentist, if he is to excel in his art, cannot hope to know all that the physician must know and the surgeon must know. Such being the case, where shall we begin to narrow the education of the dentist?—for narrow it we must. How are we to differentiate the training of this special healer from the training of the general healer, the physician or the surgeon?

The training of the doctor is partly general, partly special. His special training ought to be as full and as complete as possible; he cannot know too much, he cannot be taught too much of actual disease and of the various means to combat it. His general training stands on a different footing. The object of this is to enable him to understand and judge the special knowledge which he has to acquire, and though from one point of view no general education can be too wide, from the point of view of the demands of actual life that general education is sufficient which secures the above object and which adequately prepares him for the special train-

ing which follows. The main elements of the doctor's general training are these: He must know general pathology, the nature of the processes of disease. This is the central element, the fundamental element, absolutely necessary for the understanding of the true nature of individual maladies, and time spent on this is time wisely and economically spent. Further, he must know physiology and anatomy, but there is no need to carry his studies in these further than is sufficient to enable him clearly and fully to lay hold of the truths of pathology and the laws of health, and to impress on his mind such details of topographic anatomy as will always stand him in good stead in his practice as a physician or a surgeon. Lastly, he must know physics and chemistry, for without a certain knowledge of these he cannot understand physiology, and must remain really ignorant of pathology.

The dentist, like the doctor, needs a general as well as a special training. What can be said about the general education of the dentist? And when I say "dentist" I mean the scientific dentist, he who does his work not by mere rule of thumb, but in the light of scientific knowledge and under the guidance of scientific principles—for it is with him alone, I take it, that we are interested here. What ought the scientist dentist to undergo in the way of general training?

I imagine that I shall not go far wrong when I say that, in common with the doctor, he ought to possess a general knowledge of pathology. He has to deal with disease, with disease of the teeth and, indeed, of the mouth, and he ought to be well acquainted with the general truths of pathology. He need not be carried further into the details of disease than is necessary to enable him to understand general morbid processes and the common ways in which living structures go wrong. But he may with profit be led to spend some considerable time on that division of pathology which teaches how many of the ills that flesh, even the hardest part of it, is heir to are the handiwork of minutest organisms, are scourges laid on by invisible rods. What we now call bacteriology must, so far as it deals with disease, be an essential part of every dentist's training. Beyond this the dentist needs, like the doctor, such knowledge of physiology and anatomy as will enable him to lay hold securely of pathology, but in his case the details of the topographic anatomy of the body at large are not needed, and may fitly give place to a knowledge of the anatomy and physiology of the teeth, more special and more complete than is ever needed by any doctor. Such a general training is one more or less common to both the dentist and the doctor. But the former has also need of a general—that is, of a preparatory—training wholly uncalled for in the case of the latter.

The days when the public mainly judged of the merits of a dentist by the celerity and freedom from pain with which he robbed his patient of

possessions which could never be really replaced are long gone by. The art of the dentist is now pre-eminently a constructive and preservative art. And the dentist, if he is to succeed in construction, must know the nature of the materials which he constructs, and the physical, mechanical laws of the construction which he attempts. If, in order to grapple adequately with disease, he must share in the general training of the doctor, he must, in order to grapple with the difficulties of repairing the ravages of disease which he and others have failed to prevent, share in another general training of a wholly different kind. He must be inducted into some, at least, of the mysteries of metallurgy; he must have a scientific knowledge of the chemical and physical properties of the varied materials which he uses for construction, and he must learn something of what may be described as a special branch of engineering. He must be trained in ways and things wholly unknown to the physician and the surgeon. Moreover, if he is to hope to succeed in his profession, he must know the things of which I am speaking, not only theoretically, but practically. Just as the young doctor begins his practical hospital duties by dressing wounds and acting as a nurse, as the general who commands armies has at the beginning to take his place as a private in barrack square drill, as the young engineer puts on his blouse to go through the workshop, so the young dentist must spend an allotted time at the bench.

Obviously the training of the dentist, much as there always must be in it common with that of the doctor, must be narrowed in its own way if the cone of education is to be brought to an effective apex.

Doubtless the dental profession has much to gain in many ways by a close alliance with the medical profession. The position of being a branch of the great and powerful medical profession gives it advantages many and great, and it would be folly to cast away these advantages by demanding a divorce unless that divorce be really necessary.

One object, and one object only, ought to be the aim of the training of a dentist—to make him as sure and as efficient a workman as possible. If, as seems probable, in the rush of men and things, ordinary minds under ordinary circumstances cannot achieve that efficiency and at the same time pursue a complete medical education, then some separation seems inevitable. The separation, however, should not be a divorce, but simply a deviation or differentiation, a claim for a separate apex hand in hand with the acknowledgment of a common basis.

The president said that after the remarkable speech of Sir Michael Foster he could not hope to say much, because his knowledge of English was very limited. He was almost impelled to close his manuscript and sit down, as there appeared to be nothing more to say. He had come to the town of

Cambridge and to its university not only to place himself under the instruction of great philosophers, but to feel the influence of the education which had been going on there for centuries. Sir Michael Foster had spoken and advised on a question which divides the dentists throughout the whole world, and Sir Michael had said what was to be said better than anyone else had ever said it before. But, as he had prepared a speech, he supposed that he must say something, and he claimed their indulgence.

The president then delivered the following

Inaugural Address.

Last year, the twelve hundred dentists who attended the Third International Dental Congress, which was held at the time of the Paris Exposition, decided to preserve the professional organization created in view of that Congress by organizing the International Dental Federation, with its Executive Council and an International Commission of Education. The dentists wanted to form a universal union of the nature of that formed several months afterward in the case of the *sociétés servantes* while waiting for the time when diplomats and governments should realize this union in all the branches of human activity, making the latter a compact entity. According to this decision, a meeting was held in Paris immediately after the Congress.

This year we have come to England to hold our second meeting. The welcome that has been tendered us, the prominent men that have taken part in our discussions, and the first results of our work show that the organization newly created by the Paris Congress supplies a necessity of our epoch, and that it will produce useful results for the advancement of the science of odontology. I have maintained that the meetings of the International Dental Federation attract the choice men of our profession. And indeed they are choice men—those who do not hesitate to leave their families, their occupations and their countries to discuss topics not of direct or immediate interest to them, but that constitute the problem of the education of their successors. Our *confrères* will certainly ratify the statements just made when they see the list of practitioners that have attended our meetings, representing sixteen of the most important countries of Europe and America.

As far as our labors are concerned up to the present, they have consisted mainly of an exchange of ideas in view of organizing and devising a plan of work for our future meetings. The more complex and important a body is, the longer must be its period of organization.

The birth of the new element of professional progress took place last year in the midst of great ceremonies, and in the presence of the most

authoritative representatives of the dental profession of the world, in a meeting presided over by one of the greatest *savants* of the University of Paris, Professor Gariel, the delegate of the government. It has been the desire of the Executive Council that the second meeting, which constitutes for our International Federation a sort of scientific baptism, should take place with the same ceremonials, and for this purpose it has requested the eminent vice-chancellor of the University of Cambridge to stand as its godfather.

The Executive Council has honored me with the delicate mission of indicating the purpose that we are working for. Pardon me, gentlemen, if I confess to a feeling of timidity in having to address so distinguished an audience, in view of the knowledge and talent properly required for such a task. I shall, however, endeavor to fill any lack in those two factors by contributing all the good will of which I am capable.

Our work is one in which we have to deal constantly with difficult problems. In the first place, we have the diversity of languages; this, however, is an obstacle easily overcome. There is another one of greater magnitude, brought about by the character of the different countries in which we live, by the difference in the legal conditions of their organization, and especially in their degree of evolution—evolution which is in some slight degree the cause of our diversity of opinions. We must make great efforts and many mutual concessions in order to harmonize our national conceptions into the international plan which it is our wish should emanate from our discussions. A certain amount of work is also necessary, in order to set forth this program in such a way as to be understood and accepted by every one of us.

It seems to me that it is a daring act for me, the modest representative of a science as yet new, to stand here in this old university, before such distinguished professors, and talk to you on education—that is, on one of the highest problems, even though it be limited to the training of young dental surgeons. Therefore, I have aimed to shelter my affirmations under the authority of men whose names and writings are highly valued in this connection. Two thoughts that I have borrowed from Michelet have encouraged me. One is that education is the first, the second, and the third part of politics—that is, its pure essence; and the other is that an advanced society teaching ought to be the function of almost every one.

While working at the preparation of this paper, my mind was impressed with the importance—for the future of humanity—of an Anglo-French combination. And so I consulted alternately the French and English philosophers. I went from Michelet to Herbert Spencer or Stuart Mill, and from Roger Bacon to Descartes, in order to borrow from them the general principles which must guide us in the separation of a national

program of instruction in the midst of the contradictory ideas which are contending for the direction of public education. It has been through the inspiration of their principles that we are able to know the value of every science which is to be part of this program, and adopt a method of appreciation of their worth; and also in order to know the means of differentiating between studies having an intrinsic value and those having a merely conventional one, and between those that are valuable from the viewpoint of knowledge and those that are important from the standpoint of education and discipline.

We shall then understand better the difficulties of education in general, with the harm that can be done to the mind by the studies that may enter into the formation of a program or by the faulty order in which they are taught; also the necessity of proceeding from the concrete. It will be easier to understand the necessity of comparing these general principles of education with those that inspired the curricula of our schools, prepared empirically and according to the needs of the respective countries.

Among the general notions capable of directing us in our work, and that can be transformed into accurate proportions applicable to the teachings with which we are concerned, I will quote the following paragraph from the admirable work on education by Herbert Spencer: "One of the conclusions at which we arrive is that in every branch of knowledge we must proceed from the empirical to the rational. A leading fact in human progress is that every science is evolved out of its corresponding art. It results from the necessity we are under, both individually and as a race, of reaching the abstract by way of the concrete; that there must be practice and an accruing experience, with its empirical generalizations, before there can be science. Science is organized knowledge, and before knowledge can be organized some of it must first be possessed. Every study, therefore, should have a purely experimental introduction, and only after an ample fund of observations has been accumulated should reasoning begin."

It is curious to observe that this proposition of the English philosopher can be easily applied to the organization of dental education, such as has been very well understood by the different nations, especially by the United States, England and France. In fact, in the English schools the apprenticeship of dental prosthesis precedes the special scientific and medical studies, which, in the evolution of the profession, is according to the historical evolution indicated by Herbert Spencer, and according to the principle of the subordination of the abstract to the concrete. We will endeavor to inspire ourselves with the principles of those great thinkers who have studied education in general, that we may apply them to our particular branch of education, whose purpose is to form good odontologists.

**Value of
Dental
Education.**

It is not an indifferent question, for the state and for the people at large, that odontologists should receive a rational education in proportion with the progress of their special science—an education capable of developing their qualities to their maximum.

It is not necessary that I should say anything to you upon the utility of the dental system for the preservation of health. At an epoch not very remote from this good teeth were an indispensable requirement of the soldier, who, however, had to open cartridges with his teeth. Progress in the military art has caused the disappearance of this practice. The state should by no means, just for this reason, be indifferent concerning the organs under our supervision. The teeth are always necessary for the development of the child, as well as for the conservation of health in the adult. Dentistry should hence be in evidence in the school, in the army, and in all aggregations of human beings as an important part of hygiene.

Likewise, it seems unnecessary that I should call the attention of dentists to the importance, for his dignity and for the position that he should occupy in the state and in the public estimation, that he should receive a complete and rational education, which would permit him to render to his fellow-citizens all the services within his province. A good education for the dentist is for the state a question of public interest, as it is for the dentists themselves a question of professional advantage. This for a long time has been perfectly well comprehended by our *confrères*, as can be seen by the papers on these questions that were read at our last professional meetings.

From the foregoing, it can be seen that the international union that we are endeavoring to bring about is useful and desirable, but the obstacles to which I have already referred, obstacles with regard to the laws, customs, traditions, the routine, the prejudices of every country, are numerous. There are others inherent to the conditions of evolution of odontological science, and to which I shall refer only in brief. Odontological science, from the view-point of special science, is relatively a new one, at least it has been recognized as such only in recent times. Recent historical works show that in all refined communities, in Egypt, in Greece, in Rome, the dentist existed in remote times as a special practitioner.

**Relation of
Dentistry
to Medicine.**

At the beginning, when medicine was closely connected with the priesthood, the priest, and later on the physician, were able to treat the disorders of the teeth as well as those of the other organs of the body, but soon a different kind of treatment became necessary—the prosthetic or restorative one, involving a mechanical art with which the physician was not familiarized and to which he was not sympathetic.

thetic, according to the expression used by Dr. Kirk. It is this prosthetic art that gave birth to the prosthetic dentist.

The evolution of odontological science has taken place not without a certain amount of antagonism between these two kinds of practitioners; the physician, on the one hand, occupying himself with the purely medical phase of the diseases of the mouth, and the specialist of dentistry of the prosthetic phase being a simple artisan at first, becoming later on the surgeon-dentist, having added gradually to his technical training in order to reach that step—the study of the medical branches directly applicable to the needs of his *clientèle*.

As Dr. Kirk has very wisely said, it is he who can be looked upon as the departing-point in professional dental evolution in all countries. It is by him and for him that this evolution has taken place. It is for him that in 1700 special laws were framed in France; it is for him that later on, in 1726, Fauchard, the father of modern dentistry, wrote the first special and complete work on dentistry. It is for him that in 1838, in Baltimore, Harris and his friends founded the first dental school, separately from the schools of medicine, after an interesting declaration of independence, which can be considered with Fauchard's book as the *acte de naissance* and the scientific basis of odontological autonomy.

A certain number of dentists, holders of the medical degree, considering that medicine and dentistry should be indissolubly ligated, did not adapt themselves to the plan that dentistry should be taught and practiced as a specialty of medicine. And, as Dr. Kirk says, this opinion persists in spite of the success obtained by the dental schools in all the countries of the world, and also notwithstanding the fact that the separation between medicine and dentistry is becoming more accentuated from the standpoints of both education and practice. Some countries of Europe have followed this doctrine, and have arranged accordingly education and practice.

It is understood that according to whether one or the other principle is accepted, the solution differs as far as education is concerned. In fact, if ophthalmology, laryngology, and gynecology, it suffices that the student should first conclude his medical education in a medical school, and then if he thought it necessary he would go for a few months to a dental school in order to familiarize himself with the technique of dentistry that he did not learn in the hospitals. In the second case the student enters from the beginning the dental school, where he completes his entire education, just as the student in pharmacy studies his profession in a school of pharmacy, with the addition, if necessary, of a few special courses at the school of medicine or at the hospital.

In order to cause the disappearance of the antagonism of these conceptions, and to dissipate the difficulties that they oppose to the progress

of our teaching, it is necessary, according to Herbert Spencer, to bring to light the facts which have been accumulated in sixty years of teaching in the countries where dental education has been organized in an empirical manner; this is, according to the needs and necessities of the time. For this purpose, we have to make appeal to impartial statistics. This is the first part of the work of the International Commission of Education. This introductory work is important from the standpoint of the direction in which dental education should go, and also from that of the position that this teaching should occupy in the universities. But this question is not the only one that requires our attention; there are others, of secondary importance, it is true, but nevertheless questions which the representatives of both doctrines could discuss to advantage and agree upon. Among these we should include the problem of the necessary preliminary education for the dentist.

Preliminary Requirements.

On this question we also see the reappearance of rivalries of the classical and scientific education with regard to the utility of the mechanical and preliminary professional education, such as is given in the United States in the manual training schools, in France in the Ecole Diderot, as adopted by the Paris Congress, and such as we see it in London in the Institute of Technology as organized by our friend Cunningham. We will also mention the question of the extent of the scientific programs, medical or technical, theoretical or practical.

In order to determine exactly the studies which should enter into the program, we must first of all determine the duration of these studies. It is evident that when the time shall come for the discussion of the quantity of medical sciences and of mechanical art that should compose the program of the future dental surgeon we will again find the partisans of the two opposite principles. But then one factor interposes itself like an arbitrator; I mean the duration of the course—the number of hours that could be reasonably consecrated to dentistry. "Had we time," says Herbert Spencer, "to master all subjects, we need not be particular." To quote the old song:

Could a man be secure
That his days would endure,
As of old, for a thousand long years,
What things might he know!
What deeds might he do!
And all without hurry or care.

But "we that have but span-long lives" must ever bear in mind our limited time for acquisition. It is superfluous to declare that we must limit ourselves to the useful, to the essential, to the indispensable. "It is

not necessary," says Descartes, "that the honest man should have read all books, neither is it necessary that he should have learned everything that is taught in the schools. Moreover, it would mean a mistake in his education if he had consecrated too much time to the study of letters; there are many things to be done in life." Hence the time that it is possible to devote to study will be co-arbitrator with another factor—the number and nature of the operations which the dentist is called upon to perform at the present time in the branches of operative and prosthetic dentistry and anesthesia.

Lastly, the results obtained in the different educational centers, with the different systems in vogue in America, England, France, Switzerland, Austria, Germany and Russia, will also enter in this account. This is why the active collaboration of the men of all countries is necessary. Then we will see that by placing ourselves on an international standpoint all our discussions will lose some of their acerbity and intensity, and we will get rid of the irritating questions which often refer to minor considerations—mere words or purely local designations—rather than to real division.

By elevating the discussion to a philosophical standard, we shall agree that odontology is a science which tends to the preservation of man; it is a biological science. Hence it is perfectly possible to conceive, according to Professor Eliot, president of Harvard University, recently quoted by Dr. Kirk, a new university where the teaching of biological sciences would be established on a broad basis, so that all students, according to the purpose of their studies in relation to the profession chosen—so that practitioners or savants, physicians or dentists, should be able to take up the fundamental knowledge which they would require while following the study of a specialty not taking up more than about four years, and to conclude by obtaining the final diploma of doctor in this specialty.

Under such conditions dentistry, says Dr. Kirk, would have a place in medical education or, better, in the university in proportion to the needs of its practice, and the antagonism to which we have referred would not exist.

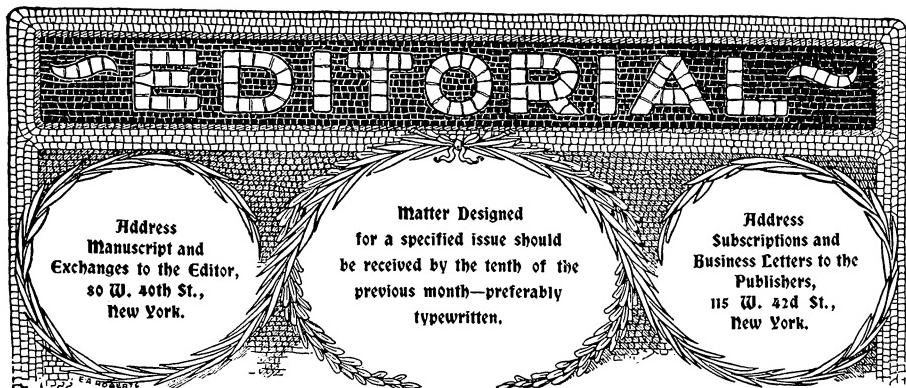
But, no matter what the future reserved to this proposition is, in the meantime the discussions of the International Commission of Education will contribute to advance in our several countries the question of the position of the dental surgeon and of his education. We want to work for the benefit of our successors, and prepare the best program of intellectual, moral and physical education. Besides, in this work there is a thought capable of giving us much satisfaction—the thought of love of humanity; and love, according to Auguste Comte, is the secret of human nature, the secret of the world.

We have applied to this work the principles of thinkers and of phil-

osophers of whom humanity feels honored. By the welcome that has been tendered us we are assured of the support of the savants of this university. This is our encouragement, and also our reward.

This work is new ; it will have to be developed by others, and, as stated by that great man who went through this university—Roger Bacon—“Many will pass and science will grow.”





The Latest Crown Company Decision.

Our readers have undoubtedly all read the Associated Press dispatches announcing a victory for the International Tooth Crown Company, in the suit recently tried in the New York courts, together with the statement that millions of dollars would now be collected from dentists as royalties for alleged infringements of their patent. Letters have reached us from all quarters of the country asking for the facts.

The case just tried was a suit brought by the Crown Company against the Hanks Dental Association, asking damages for infringement of the Low bridge patent. The defendants being members of the Dental Protective Association, the suit was fought by Dr. Crouse and his lawyers. In a sense, the validity of the Low bridge patent became an issue, in that the defendants claimed that the patent was not a righteous one; but the verdict in favor of the plaintiff does not carry with it a final establishment of the patent.

The case, because of legal technicalities which need not be explained here, was tried by a jury, and the trial judge ruled out all reference to previous trials, except where identically the same parties had been at issue. He declared that previous judgments as to the main cause, the validity of the Low patent, could not enter into the present jury trial, but could be later brought before a higher court, should an appeal be taken. In effect this meant that the cause before him and the jury, was merely the suit of the Crown Company against Hanks, and if by way of defense the Hanks

Company could show by *prima facie* evidence, and to the satisfaction of the jury, that the patent was invalid, such evidence would be competent as tending to disprove the charge of infringement. Thus a verdict against the Crown Company would have invalidated the Low patent, whereas a verdict in their favor does not establish it, but merely indicates that this jury, not being satisfied that the patent is invalid, decided that infringement had occurred, and then assessed damages.

In any event it is a decision in the Hanks case only, and does not pre-judge or decide similar suits against any other dentists. In more detailed explanation of this, it may be well to state fully just what the Low patent is, as many minds seem to be befogged on this point.

**The
Low Bridge
Patent.**

In simple language, bereft of the technical tanglements of patent specifications, the Low patent covers a single tooth, soldered to an open band, which band is cemented upon an adjacent tooth. The inventor declares, however, that in some cases it may

be wiser to use two bands, one at either end of the bridge. As the most important specification, he states that his bridge allows the teeth to rest *free from the gum except for a slight apparent contact at the labial or buccal aspect for the sake of natural appearance*. He declares that prior to his invention all artificial teeth *rested firmly against the soft parts, causing disease and absorption because of accumulations of food, whereas by his method of suspending the teeth the soft tissues remain healthy, being freed from pressure and food debris*.

If we analyze this, an interesting series of facts is disclosed. First, as great stress is laid in the patent specification, upon the fact that the teeth in the Low bridge patent do not rest upon the gum, the question naturally arises, would a bridge, supported by bands, the teeth of which were attached to a saddle resting firmly against the gum, be an infringement of the Low patent? Even if the Hanks decision should be sustained in the appellate division of the court, it would not determine the above question. Hanks admitted that he had made Low bridges, but entered the defense of invalidity of the patent. The jury not accepting this defense, gave damages to the plaintiff. The question as to whether a saddle bridge infringed the patent was consequently not before them, and is therefore still to be tried. The great probability is that such bridges do not infringe

the Low patent, because they are erected upon the very principle which the Low patent specifically denounces as being a menace to the continued health of the mouth. The only point at issue would be as to the attachment by bands, that is to say, even admitting that the saddle is not a Low bridge, would it be an infringement if said saddle were held in place by bands? This is undetermined by the present verdict.

Again, the Low bridge is held in place by open bands. The question arises, if the bridge is sustained by full cap crowns, would that be an infringement? This not having been disputed by Hanks, is also not decided by the jury's judgment. It is understood that the Crown Company claims that a cap crown is a Low band plus the occlusal cap. Against this are three good contentions. First, admitting that for convenience the crown is sometimes made sectionally, and composed of a band plus the occlusal cap, it may also be swaged of one piece, as the Evans crowns are made, in which case the limitations of the band and occlusal cap cannot be indicated. The method of constructing a finished product cannot alter the principal involved, and consequently if a swaged crown is no infringement, a crown made of two parts soldered together cannot be. Secondly, the patent is not upon the band, because Magill introduced the band cemented to teeth many years prior to Low's patent. If the patent is valid, therefore, in this feature it protects a band only, as the sole supporting reliance for a bridge which does not rest upon the gum. *The full crown, on the contrary, supports the bridge by resting upon the occlusal surface of the tooth, and does not act through its circumferential bearing.* In proof of this, make a crown by swaging an accurate cap, and to this solder a band which is much too large for the tooth, and if cement be placed solely in the occlusal cap, the band being allowed to stand off from the tooth at all parts, and without cement, the bridge would still be supported, which shows that the principal of the open band and the full crown are totally at variance.

The facts outlined above have, however, not been determined in this last suit, because, as stated already, the defendant Hanks admitted the work, but denied the validity of the patent. The nature of the work, therefore, was not an issue. On the other hand, the records of the case ought to delimit the claims of the Crown Company, as, throughout the trial, they seemed to have rested content upon the literal terms of their patent claims.

**The Future
of the
Litigation.**

Our readers will be desirous of knowing what promise there is in the future. How will the latest decision affect them as individuals? The Dental Protective Association, in the first place, will appeal the case and fight the cause in the present instance to the last court. Should the verdict be sustained, they would admit only that it settled the Hanks claim. No member of the Association will be permitted to pay any royalties on demand of the Crown Company. Suit must be brought against every individual. Each cause would be a separate issue, tried on its merits. For example, should the Crown Company next sue Dr. John Doe, the claim would be made that such bridges as may have been constructed by Dr. Doe were so essentially different in principal as to constitute no infringement of the patent. Dr. Doe, perhaps, has invariably used saddles, and that principle being denounced in the Low patent, the infringement would be denied.

In simpler language, the Protective Association means to continue the fight, and the members of the Association may rest comparatively easy in their minds, assured that they will be cared for if attacked.

Of non-members the same, of course, cannot be said. Very probably the Crown Company, recognizing the tremendous difficulties of collecting royalties from the members of the Protective Association, will first operate against those who have not joined the Association. They will use the late decision in their favor, as establishing the validity of their patent, and in a suit at law against an individual the chances of obtaining judgment would be largely in their favor, as the individual would not have the resources of the Protective Association in defending himself.

**The Duty
of
Dentists.**

The best course, therefore, to be pursued by non-members in the present crisis, and the crisis is real enough, is to immediately join the Protective Association. There is a triple reason for this. First, from the selfish standpoint it will be the cheapest recourse.

Second, money paid to the Protective Association becomes a part of a fund used in establishing a principle for which the whole profession is contending. Lastly, money paid to the Crown Company is an assistance to them in the fight against the freedom of individual practice, for which the dentists are fighting.

A Personal Explanation.

In view of the fact that in the past I have editorially been at variance with Dr. Crouse, to some it may seem inconsistent that the above editorial, advising our readers to support the Protective Association, should appear in our pages. An explanation, therefore, seems needful, lest the influence of ITEMS OF INTEREST, as a medium operating for the interests of the profession, may be injured. I have believed in the past, and I have openly declared in the past, that Dr. Crouse's conduct of the Crown Company suits has been based in error. I still believe, and I still declare, that an error has been made, and I say this in spite of what has been accomplished by the Protective Association. But may I ask here "What has been accomplished?" The answer in a single word would be, "Delay." Let us ask ourselves at this juncture, "For what have we been contending? Why did we join the Protective Association in the first instance? Was it to prove the invalidity of one, or of two, or of ten patents? Or was it to establish the principle that the individual, manual work of the dentist should not be patentable?"

If for the former reason, then we must admit that the Protective Association is nothing but a trades union fighting for self. If the latter, we have existed as an association of scientists fighting for the right of best, conserving the health of the mouths of our patients, and as such we have been fighting for the best interests of the community.

How has the battle been waged? A regular patent lawyer was engaged, and whatever may be his ability, I maintain that he has injured rather than aided the cause we should have had at heart. For years the contest has been against validity; the defense has been lack of invention, or priority of invention. In the end, as it exists at present, the decision is against us. A jury of laymen, men who are a part of that very community whose interests we should have been safe-guarding, have decided against the contention of the profession, against their own best interests, and in favor of the individual dentist and his little patent. By the very course pursued by Dr. Crouse and his patent adviser through all these years *it has been practically admitted that operations on the teeth are fit subjects for patent*, because they have never denied the principle, but have ever resisted

the patent on the ground of priority or lack of invention. They did, however, in one instance find a judge who voluntarily declared that the tooth root, being an essential feature of the crowning combination, the whole combination was not subject of patent, as no part of a patented combination could be a portion of the human frame. Has any use been made of this decision, which was manifestly a step in the direction of our main contention?

Why, then, believing this, do I advise our readers to join the Protective Association? What else can they do? In unity there is strength, and we must still fight on. Then, again, common sense and common honesty bids me admit that even as I consider Dr. Crouse to be wrong, so must I admit that it may be myself that is in error. Dr. Crouse, by the advice of his attorneys, has followed a given line of attack so long that he cannot retreat. In the face of a temporary but serious defeat he must push ahead. He may win; I hope that he will, because a victory would probably discourage the formation of companies similar to the Crown Company for another century or more. And if the fight is to be waged, the dentists should stand shoulder to shoulder in support of the general in command, in this instance Dr. Crouse:

On the other hand, I confess I would view with equanimity the court's support of the Hanks verdict. It might mean a loss of much money to the dentists of the country, but it would awaken them from the lethargy in which they have rested, lulled into an imaginary security upon the payment of a few dollars, and leaving all the work of the contest upon the shoulders of one self-sacrificing man. If Dr. Crouse has erred, all the members of the Protective Association are the real offenders. Since they have been content with his conduct of the case, they have indorsed it. Had we really been fighting for the great principle for which I contend we should have fought; had we been working to save teeth for our patrons, rather than to save dollars in the shape of royalties, we would long ago have asked Dr. Crouse to abandon the priority and lack of invention defense, and to try to establish the principle that the treatment of the diseases of the human body never was meant to be a subject matter of patent. The fact that our work is largely mechanical, has confused the minds of those in the patent office, and from this misconstruction of the real intent of patent law the whole disaster has come upon us.

Perhaps if Dr. Crouse should lose the Hanks case in the appellate court he might be awakened to the possibility of his having been in error, and in the next case fight on the line that a denture of any kind, made for an individual, and useful to no other individual; a product never in a single instance duplicated, is not a mechanical device in the patent office sense. Therefore, again I say, in spite of my differing from Dr. Crouse, I advise all not now members of the Protective Association to join at once.

R. OTTOLENGUI.





Questions will be answered in this department, provided the answers would be of general interest. After publication our readers are cordially invited to make further reply, criticism or comment.

We have been informed on good authority that while the Governor of the State of Illinois was easily persuaded to reorganize the State Board of Dental Examiners, and while there is a reasonable chance that the delinquent member will be punished, apparently the colleges, which have been flooding Europe with diplomas of such a character that American diplomas abroad have come to be looked upon with doubt, have so covered up their wrongdoing, by keeping at least within the technicalities of law, that there will be little chance of procuring annulment of their charters; at the same time, the effort will be made. Those who have the matter in hand will probably be interested in the following translation of a circular recently distributed in Germany, especially the letter purporting to come from the Governor:

The members of the faculty are as follows: "Dr. Rudolph Munn, Professor of Physiology and General Pathology; Dr. Alfred Weber, Professor of Anatomy and Histology; Dr. Alfred Decker, Professor of Materia-Medica and Bacteriology; Dr. H. N. Opitz (G. A. D. C. graduate), Professor of Operative Technic and

**Prospectus of
German-American
Dental College.**

Prosthetics; George B. Masslich, Ph.G., Professor of Chemistry and Metallurgy; Fritz W. Huxmann, D.D.S. (Hon. causa G. A. D. C.), Dean and Professor of Special Pathology and Therapeutics, Operative Dentistry, Embryology and Ceramic Prosthetics.

"The dentists Fritz B. Huxmann, Frank Richards and others demonstrate Operative Dentistry and Prosthetics.

"Students will be given the opportunity to witness surgical operations.

"The German-American Dental College was incorporated in the State of Illinois, February 28, 1888. By virtue of its charter it can confer the degree of 'Doctor,' and entitles the 'diploma' to a license to practice dentistry the same way, as any other reputable dental college.

"This college stands under the supervision of the Illinois State Board of Dental Examiners, which is lawfully appointed by the Governor to watch over the different dental colleges. The G. A. D. C. was founded by men who believe that medicine and dentistry are so closely allied, that students of dentistry must be taught the principles of medicine.

"The course of terms of the G. A. D. C. is the same as followed by the European and some American universities—summer and winter course.

"The G. A. D. C. belongs to the German-American institutes, as it shows by its technics in the German and English languages, which unites the advantages of the German and American teaching systems.

"While in Germany, students are not obliged to hear the lectures, it is obligatory in America. Students who have not at least attended 80 per cent. of lectures, will not be admitted to the final examination; they have to deliver a great deal of operative and technical work; without their satisfactory execution, they will not be examined. That a student in this way is forced to learn something in theory and practice needs no further comment.

"The American institutions have during the year only one session, and the poorer student is forced to earn his living during the summer months. As already above mentioned, the sessions of the G. A. D. C. follow each other, so that the students are not forced to interrupt their studies.

"If one can graduate only after three or four years in the other American institutions, it is possible that you can graduate from the G. A. D. C. after one and one-half years, if you have passed your examinations, and if you have been already working in operative and technical dentistry for some years.

"This succession of courses has induced the *Trust of Dental Faculties* to declare a destroying war against the G. A. D. C. and her former pupils. All kinds of lies have been published by this trust and its followers, in order to harm and destroy the G. A. D. C.

"The best proof that these means cannot endanger the G. A. D. C. is shown in the following letter of the Governor of the State of Illinois:

July 24, 1901.

"MY DEAR SIR:

"In answer to your letter of the 17th inst., containing certificates of the Illinois State Board of Dental Examiners, Nos. 3200, 1510, 1548 and 3194, as well as document of the 13th of March, signed and sworn to by G. A. McMillen, I return all these documents together with copy of letter, which I send today to the Imperial German Consul (Dr. Wever, Chicago), etc., telling him that the records of the State Board show that the diplomas of the German-American Dental College are recognized since 1893.

"Yours very truly,

"RICHARD YATES, Governor.

"DR. F. W. HUXMANN, 14 and 16 Wisconsin St., Chicago."

"The best practical proof, how the students of the G. A. D. C. become educated, is the result of the last State Board examination. In all sixty-four candidates were examined; of those nine received their teaching by the G. A. D. C., and the others by the *Trust* colleges. The result was that all nine candidates of the G. A. D. C. were approved, and of the other candidates only twenty-two, or less than half; comment not necessary."

**Successful Use of
Chloretone.**

Dr. T. F. Driskill, of Corsicana, Tex., records his experiences with chloretone as follows: "I have carefully read the article on chloretone in the ITEMS OF INTEREST, page 637, August, 1901:

"Please permit me to say that I have been using chloretone now quite one year. I first used a tepid water saturated solution. This did not prove satisfactory. My needle would often stop up. The anesthesia was not so good as my cocaine preparation. But having used cocaine from its first introduction, I have learned well its evil effects, and, therefore, I determined to further try chloretone, I then used various proportions of absolute alcohol and water. Finally I settled on the following:

"Water, from 5 to 8 parts.

"Absolute alcohol, 1 part.

"Chloretone crystals, q. s. to make a saturated solution.

"This I inject and wait from one to two minutes. Then I repeat. This I continue until I have given from two to three injections. I usually operate or extract, as the case may be, from ten to twenty-five minutes from the first injection.

"Only a few days ago a young lawyer, who was suffering from severe pain in the inferior maxillary and all the right side of his face and head, presented himself for treatment. On examination I found a

considerable portion of necrosed process and bone, which had resulted from a fracture in being thrown from a buggy.

"One tooth had been removed and the parts had been freely lanced for an ordinary abscess.

"The young man had not eaten anything for a number of meals. I washed all the pockets out with a strong saturated solution of chloretone in water and alcohol. He was free from pain in a few minutes. I advised him to go and take all the nourishment possible, and to return within three hours for the removal of the necrosed bone. On his return he told me that the anesthesia lasted long enough for him to eat a satisfactory dinner, and that the pain was very slight when he returned.

"I proceeded to irrigate all pockets again with the chloretone solution. In five minutes more I began to inject in the adjacent tissues, and at the end of thirty minutes I removed a section of at least $1\frac{1}{4}$ by $\frac{1}{4}$ inches of the outer wall, as well as all the teeth that were involved.

"We thoroughly curetted all affected bone without pain to the patient. I saw this patient every day for a week, that I might give him the ordinary care and treatment. No sloughing followed, and the patient did so nicely that I dismissed him after a week's treatment."

**First Production
of
Dental Porcelain.**

In the August number we published a short paragraph, sent to us by a correspondent, accepting the statement without question. In our last issue Dr. William Trueman discussed the subject from the standpoint of the early production of porcelain, while a prominent manufacturer of teeth now fairly stuns us with his arithmetic. He calls attention to the statement of Mr. Craig that a single order of nine million porcelain teeth was filled recently for the City of St. Petersburg alone. He suggests that the editor ask the tooth department of the Consolidated how long it would take to fill an order for nine million teeth, and he says: "The platinum alone would probably not be less in value than four hundred thousand dollars, and I doubt very much whether a single order for porcelain teeth was ever given by anybody in Russia amounting to one one-hundredth of the quantity above stated. I do not believe that there are more than two concerns manufacturing artificial teeth in the world whose whole production equals nine millions in one year."

It is elsewhere announced in this issue that a **Dental Congress in St. Louis, 1903.** Dental Congress will be held in connection with the World's Fair, at St. Louis, in 1903. The following statistics in regard to buildings will give some idea of the magnitude of the undertaking:

"The development of the Louisiana Purchase Exposition (at St.

Louis), along many lines during the last few days has been quite appreciable. The definite statement of the sizes of the principal exhibit buildings is of especial interest. The largest of these will cover $32\frac{1}{2}$ acres, and will be devoted to agriculture and allied industries. Seven other buildings will cover about 17 acres each, and four others about 9 acres each. The total now planned for will amount to about 187 acres. These figures give some idea of the magnitude of the Exposition by which the Centennial of the Louisiana Purchase is to be celebrated in 1903.

"The Commission of Architects devoted some time last week to an examination and approval of the ground plan for the great fair. The work of designing the largest buildings ever used for World's Fair purposes was assigned as follows:

"Agricultural Building, 700x2,000 feet, Isaac S. Taylor.

Manufacturers Building, No. 2, 525x750 feet, Eames & Young.

Manufacturers Building, No. 3, 525x750 feet, Eames & Young.

Social Economy Building, 550x700 feet, Barnett, Haynes & Barnett.

Liberal Arts Building, No. 1, 600x600 feet, Carrere & Hastings.

Liberal Arts Building, No. 2, 525x750 feet, Carrere & Hastings.

Transportation Building, 600x1,200 feet, Widmann, Walsh & Boisselier.

"Education Building, 550x700 feet, Theodore C. Link.

Art Building, main division, 300x600 feet, two wings each 200x300 feet, Cass Gilbert.

"Mines and Metallurgy Building, 600x1,200 feet, Van Brunt & Howe.

Service Building, 300x300 feet, Isaac S. Taylor.

Electricity Building, 600x550 feet, Walker & Kimball.

U. S. Government Building, 100,000 square feet, J. Knox Taylor.

A uniformity of eave line will be observed at a height of 65 feet.

The total cost of these buildings has been estimated by Mr. Isaac S. Taylor at \$7,000,000.

A number of other buildings, not yet assigned, are to be erected."

The following correspondence is instructive, and should be of interest to the Foreign Relations Committee of the National Association of Dental Faculties. The letter was addressed to the Secretary of the Indiana Dental College, and reads as follows:

"It is my intention to take a course of dentistry, beginning this coming term.

"I was recommended to your college.

"I am from Barbadoes, West Indies, and when I have finished my studies I will go back there to practice. I would like very much to finish my course as soon as possible. In what time can you push me through?

The laws on the Island there on dentistry are not very strict as to theory. What they want is the practical part.

"Let me know what are your fees, also send me one of your catalogues, and give me all the information you can. I have heard you can push a man through there in a year or two. If so, why that is just what I want. Please let me hear from you as soon as you can."

"Yours respectfully,

"EDWARD A. DASH.

"P. S.—Let me know also if there is any particular requirements for entering college."

To the above the following reply was sent:

"EDWARD A. DASH, 43 Hancock St., Brooklyn, N. Y.:

"DEAR SIR:—Yours of August 29 has been received and contents noted. We can 'push you through' college in three years if you have the proper preliminary education and are able to pass your examinations. We cannot conceive who told you we could 'push a man through here in a year or two,' but your informant was slightly in error. This is an educational institution and not a sausage machine. No reputable college in the United States will accept you as a dental student with the view of graduating you in less than three years time, and any school that offers you anything else is unable to grant you a diploma that is worth the paper on which it is printed. If you want a dental education and are qualified to enter our Freshman class, we will be very glad to accept you as a student, but if you are looking for a fake institution you will have to go elsewhere. We are sending you a catalogue and booklet of the college today, according to your request.

"Very truly yours,

"INDIANA DENTAL COLLEGE,

"Geo. E. Hunt, Dean."

**Curious Property
of Alcohol.** Dr. J. B. Hodgin, of Washington, D. C., sends us the following communication on the subjoined clipping from the *Scientific American*:

"Some time ago I saw in a journal that the Johns Hopkins Hospital was using absolute alcohol for sterilizing purposes. Thinking this a good method of rendering aseptic my hypodermic needles, I dropped one in an alcohol bottle and left it there until I should want it again. I send you the result; a needle almost as much corroded as if it had been dropped in acid. Puzzling over this, an unexpected property of alcohol, only a week after, I stumbled over the enclosed paragraph in the *Scientific American*, which is self-explaining."

"The action of alcohol upon metals is peculiar. Dr. Malmejac in his

experiments used 95 per cent alcohol, which left no residue on evaporation. The metals, copper, iron, tin, lead, zinc and galvanized iron, were corked up with alcohol in glass flasks and kept at ordinary temperatures for six months. The copper was entirely unacted upon, but in all the other flasks there was a deposit on the bottom and the metal was covered with a similar deposit. In the case of tin, lead, zinc and galvanized iron, the deposit was white; that from iron was red, resembling iron rust, says *Science*. All of the liquids, except that in which the lead had been placed, filtered clear; the latter retained a milky appearance after repeated filterings through double filters. The clear filtrates from iron, lead, zinc and galvanized iron gave much residue on evaporation, while the residue from tin was hardly appreciable. In the former cases it is clear that not only had the metal been oxidized, but a considerable quantity had entered into the solution. These experiments have an important bearing on the storing and shipping of alcohol, as absolute alcohol is generally purchased in galvanized iron cans, so that it ought to require re-distillation."

Dr. Garrett Newkirk, 203 South Broadway, Los Angeles, Cal., sends us the following communication in regard to Dr. Cushing's books:

"A short time before his death, Dr. Cushing donated his books to the College of Dentistry of the University of Southern California, to form the nucleus of a library.

"It has been decided to make this library a memorial to his name. Certain publishers have very kindly donated books for this purpose free, or at nominal cost.

"It seems to us probable that many of Dr. Cushing's friends would be glad to give to this library valuable and rare books, or files of journals, possessed by them. The names of the donors will be duly entered in each volume so given, book or magazine.

"Correspondence with such is solicited."

Prof. Essig Resigns The resignation of Professor Essig, from the University of Pennsylvania, is announced in the press of Philadelphia as follows:

U. of P. "With the resignation of Dr. Charles J. Essig, the Dental Department of the University of Pennsylvania loses one of its most efficient professors. Dr. Essig severed his connection with the university at the close of the last college year, but public announcement has not been made. It is generally known, however, among the dental profession, and is sincerely regretted by all the friends of the university. Dr. Essig is practically the founder of the Dental Department of the university, and for several years was at the head of

this school. The Pennsylvania Dental Department was the third school created as the dental department of a university, being preceded by the Harvard School in 1867, and the Dental Department of the University of Michigan in 1875. In 1878 Dr. Essig left the Pennsylvania Dental College, and accepted a professorship at the University of Pennsylvania. Dr. Essig has been closely identified with the growth and development of the dental department since that time, and has always been very influential in shaping the policy of the school."

Song of the Hurt.

(A parody on Hood's "Song of the Shirt").

With features weary and worn,
With eyelids heavy and red,
A woman sat, uncommonly sad,
With aching teeth in her head—
 Ache—ache—ache!
In misery, pain and dirt,
And still with a voice of dolorous pitch
She sang the "Song of the Hurt!"

"Ache—ache—ache!
While the cock is crowing aloof;
 And ache—ache—ache!
Till, the stars shine through the roof!
It's O! to be a slave
Tied up to a torturing stake,
More pleasure in that, if it would but save,
This horrid awful ache!

"Ache—ache—ache!
Till the brain begins to swim;
 Ache—ache—ache!
Till the eyes are heavy and dim!
 Gum, and tooth, and head—
Head, and tooth, and gum,
Till with the pain I think I am dead,
And the day of wrath had come.

"O! men with sisters dear!
O! men with mothers and wives!
Think of the teeth they are wearing out,
The terror of their lives!
Ache—ache—ache!
In misery, pain and dirt;
The dentist should fill those carious teeth.
Ere they sing the "Song of the Hurt."

"But why do I talk of this—
This phantom of carious bone,
I heartily fear its terrible shape,
It seems so like my own—
It seems so like my own,
Because I once was there;
Methinks I now can hear the groans
As I sat in the Dentist's chair.

"Ache—ache—ache!
My misery never flags;
What can I do? I'm up all night,
Applying hot steaming rags,
Of all things, for relief, I think,
Walk the floor, and pull my hair—
At last exhausted, down I sink,
And wish 'twere a Dentist's chair.

"Oh! but to breathe the odor
Of the Gas, or Ether sweet—
With the forceps above my head,
And the teeth beneath my feet;
For only one short hour!
To feel as I used to feel,
Before I knew of pain and woe,
And could eat a decent meal!

"Oh! but for one short hour!
A respite, however brief!
To wake and find it all a dream,
But in that dream, relief;
And then to hear the Dentist say,
After my grief was stilled,
"The saddest words of tongue or pen—
'hat tooth might have been—filled.

With eyelids heavy and red,
With jawbone bleeding and sore,
A woman sat in the Dentist's chair,
And looked at her teeth on the floor;
Ache—ache—ache!
If you will there in the dirt;
But still she kept up that dolorous pitch—
Would that its tones could reach the rich,
And get their teeth *filled* ere they *hurt*.

Northfield, Minn.

Dr. H. L. Cruttenden.





Oral Surgery.

A Text-Book on General Medicine and Surgery as Applied to Dentistry.

By STEWART LE ROY McCURDY, A.M., M.D.

THE CALUMET PUBLISHING COMPANY, Pittsburg, Pa., 1901.

This is a small volume of nearly 400 pages, divided into two parts. Part One treats of General Principles, Infections, Shock, Diagnosis, Asepsis and Antiseptics, Anæsthetics and other matters fundamental to all surgery.

In Part Two occur descriptions of diseases, either oral in character or related to dental work because of the dangers of infection through their oral manifestations, such as tuberculosis and venereal diseases.

The descriptions of oral diseases and their treatment are given in very concise form, to such an extent, indeed, that the college student in this respect would find the work more useful when cramming for his examinations, than when following his serious studies during the regular term. A short chapter on "Oral Deformities" appears to be illustrated mainly with borrowed cuts, which, indeed, seems to be true of the book throughout, the illustrations belonging to all ages of the art. One objection to this utilization of the figures of previous writers is that the author who borrows is, in a sense, perhaps unrealized by himself, hampered by the need of recording or approving the methods of those who lend. For example, Fillebrown's operation is described in full detail, apparently because his cuts would add to the number of illustrations, while Brophy's operation is disposed of in four lines in the text.

In the chapter on "Venereal Diseases," the author says:

"Syphilis is inoculable from the initial or secondary lesions, but is not transmissible, either by inoculation or heredity, during the tertiary period."

This is an important statement, if true, since it is mainly with manifestations of tertiary syphilis that the dentist has to deal. The author also makes the interesting claim that the spermatoza from a syphilitic man could not infect a foetus, thus producing hereditary taint unless the mother has been also syphilitic. This view the author advanced eighteen years ago, and while admitting that many disagree with him, he notes that several recent writers take the same view.

Dental Anatomy Note Book.

For Use in Conjunction with Tomes's "Dental Anatomy," the South Kensington Museum and Personal Instruction.

By DOUGLAS GABELL, M.R.C.S., L.R.C.P., L.D.S.

London: CLAUDIUS ASH & SONS, 1900.

The first edition of this rather unique work having been exhausted almost immediately, a second edition was published, with some amendments. The first part is practically Tomes's Dental Anatomy condensed, being presented in short paragraphs under separate headlines. The second is intended as a guide to the study of the cases in the central hall of South Kensington Museum, while the third is compiled from various sources, and includes descriptions of numerous methods of preparing specimens for microscopic examination.

Throughout the work an attempt has been made to tabulate concisely and to accentuate the principal points of the knowledge conveyed. It is intended that details should be sought by the student in other books and through individual examinations of specimens. The book is well planned and should be of great assistance to students as well as to advanced workers.





MEMORIAM

Zachary T. Sailer, D.D.S.

Whereas, We have learned of the death of our esteemed fellow member and Treasurer, Dr. Zachary T. Sailer, who was for many years one of the most earnest and active members of The Alumni Association of the New York College of Dentistry, and

Whereas, We feel that in the demise of Dr. Sailer our Association has sustained a serious loss and a place made vacant that it will be hard to fill; that we have been deprived of an able adviser and staunch friend, a man of sterling integrity and professional worth, therefore be it

Resolved, That we do hereby express profound sorrow and regret at the seemingly untimely removal of our repected brother, we will miss his kindly presence, his able advice and loyal service and his memory will ever be held in tender regard.

Resolved, That we extend to the widow and daughter of Dr. Sailer our sympathy in their bereavement, and that these resolutions be spread in full upon the minute book, and that a copy suitably engrossed be presented to the family.

JOHN I. HART, President.

J. OSTRAM TAYLOR, Secretary.

Committee: BENJ. F. LUCKEY, CHAS. A. DU BOIS, BENJAMIN C. NASH, Chairman.

Resolutions of Respect.

Whereas, Our Heavenly Father, in His infinite wisdom and judgment, has seen fit to call from his earthly labors our beloved President, William McKinley, who, while in attendance at the Pan-American Exposition at Buffalo, was struck down on Friday, September sixth, nineteen hundred and one, by the hand of an avowed anarchist; and

Whereas, The hearts of the people of this great nation have been sorely tried by this unexpected and awful bereavement; and

Whereas, The cruel and unjustifiable assassination of our President

was a severe blow dealt at our American institutions, so dear to the heart of every patriotic citizen; therefore be it

Resolved, That we, the members of the Central Dental Association of Northern New Jersey, at this, our first Fall meeting, do hereby express our profound sorrow for the loss sustained by these United States, in the death of our illustrious President, William McKinley, by which sad event the nation has lost an able chief executive, a brave soldier, a wise and able statesman, a devout and earnest Christian, and a pure and noble man; therefore be it

Resolved, That we denounce in the strongest terms as unworthy of citizenship those whose teachings are hostile to American institutions, and that it is our sentiment that stringent laws should be enacted whereby anarchy and all its followers would be forever kept from this, our fair land of liberty; and be it further

Resolved, That a copy of these resolutions be transmitted to Mrs. McKinley as a token of the deep sympathy which we, as American citizens and admirers of her noble husband, feel for her, and also that a copy of these resolutions be spread on the minutes of this Society, and also that copies of the same be sent to the different dental journals.

(Signed) FRANK L. HINDLE, Chairman.
P. G. VOEGTLIN,
J. S. VINSON,
F. EDSALL RILEY,
WM. E. TRUEX,
Executive Committee.

It is with much regret and sorrow that your executive committee, in making its report to you at this the first of our Fall meetings, should find it necessary to record the death of one of the members of this Society, in the person of the late Dr. Charles S. Inglis, of Paterson.

In consequence of this sad bereavement we would offer the following resolutions:

Whereas, It has pleased Almighty God, in His wise providence, to remove from our midst our beloved associate and fellow member of this The Central Dental Association of Northern New Jersey; be it

Resolved, That we, the members of this Society, do hereby publicly express our sympathy to the bereaved widow and loving helpmate of the deceased; and be it also

Resolved, That we lament our loss, since by the death of Dr. Inglis we have personally lost a very dear friend and associate, and the Society one of its most promising and useful members: the State of one of her

favored sons, a professional man of rare attainments, dignified, discreet, brilliant and attractive; and therefore be it further

Resolved, That the above preamble and resolutions be embodied in the minutes of this Society, that a copy be transmitted to the widow, Mrs. Inglis, and also that a copy of the same be printed in the Paterson newspapers.

(Signed)

FRANK L. HINDLE, Chairman.
P. G. VOEGTLER,
J. S. VINSON,
F. EDSALL RILEY,
WM. E. TRUEX,
Executive Committee.

Tennessee Dental Association.

Whereas, With profound regret the Tennessee Dental Association is called upon to notice the death of Dr. W. H. Morgan, an old, tried and faithful member, it is meet and fitting that it should place on record its appreciation of his long and faithful services as a member, and of his far-reaching, earnest and valued services to the profession he loved.

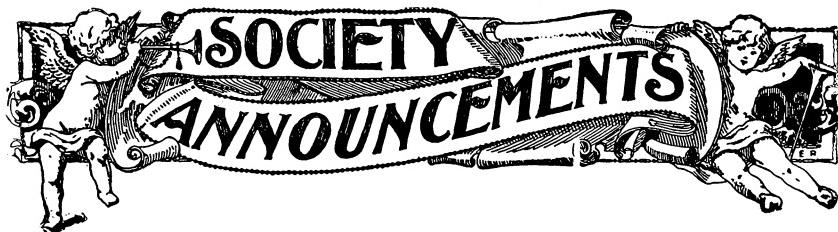
His great earnestness in professional work, his faithfulness as a member and officer of this association, his manliness and friendliness well merit our most profound appreciation and respect, and his title to the distinction of being honored as the "Father of dentistry in Tennessee."

Resolved, That by the death of Dr. Morgan the dental profession at large has lost a great man, and this society a fast and good friend.

Resolved, That bowing in submission to Him who doeth all things well, we hereby express our heartfelt sympathy to his bereaved family; and be it further

Resolved, That a copy of these resolutions be transmitted to his family and published in the dental journals.

J. L. MEWBORN,
J. P. GRAY,
A. R. MELENDY,
Committee.



The National Association of Dental Examiners.

The nineteenth annual session of The National Association of Dental Examiners will be held at the International Hotel, Niagara Falls, N. Y., session beginning at 10 o'clock a. m., Friday, Aug. 1, 1902.

It is hoped every State Board will make preparation during this year at their meetings to be represented by delegates next summer, the early notices being sent to impress this fact on the attention of the secretaries, who will please take notice.

"The International Hotel" is the largest at Niagara Falls, finely appointed and close to the Falls.

The rates will be from three to four dollars, according to the room.

588 Broad Street, Newark, N. J.

J. ALLEN OSMUN, Secretary.

Colorado State Dental Association.

At the annual meeting of the Colorado State Dental Association, held in the Brown Palace Hotel, Denver, July 9th, 10th and 11th, the following officers were elected for the ensuing year:

President, J. Stewart Jackson, Denver; Vice-President, Theodore Ashley, Canon City; Secretary, W. A. Brierly, Denver; Treasurer, Wm. Smedley, Denver.

The next annual meeting will be held in Colorado Springs during June, 1902.

W. A. BRIERLY, Sec'y.

70 Barth Block, Denver, Colo.

Pennsylvania Board of Dental Examiners.

The Board of Dental Examiners of Pennsylvania will conduct examinations simultaneously in Philadelphia and Pittsburgh, Dec. 16 to 19, 1901. For papers and information apply to Hon. James W. Latta, Secretary Dental Council, Harrisburg, Pa.

Williamsport, Pa.

G. W. KLUMP, Secretary.

Hartford Dental Society.

At the annual meeting of the Hartford Dental Society, held Monday evening, October 14, the following officers were elected:

President, James McManus; Vice-President, J. Warren Harper; Secretary, Edward Eberle; Treasurer, Ernest R. Whitford; Librarian, Albert E. Carey. Executive Committee: Nelson J. Goodwin, Chairman; George O. McLane and Elmer B. Abbey.

EDWARD EBERLE, Secretary.

Hartford Life Ins. Co. Building, Hartford, Conn.

Georgia State Dental Society.

The Georgia State Dental Society, at its last meeting, elected the following officers for the ensuing year:

President, H. H. Johnson, Macon; First Vice-Président, A. M. Jackson, Milledgeville; Second Vice-President, E. A. Tigner, Milledgeville; Corresponding Secretary, O. H. McDonald, Atlanta; Recording Secretary, S. H. McKee, Americus; Treasurer, H. A. Lowrance, Athens; Journal Editor, W. H. Weaver, La Grange.

Executive Committee: Chairman, J. C. Brewer, Blackshear; B. H. Patterson, C. C. Campbell, B. F. Hair, H. W. Walker.

Examining Board: Chairman, J. H. Coyle, Thomasville, Secretary, D. D. Atkinson, Brunswick; E. H. Reid, Thos. Cole, B. F. Sims.

Next place of meeting, Macon, Ga., second Tuesday in June, 1902.

H. H. JOHNSON, Pres.

Macon, Ga.

The Jefferson County Dental Society.

The next annual meeting of the Jefferson County Dental Society will be held in Watertown, N. Y., at the Woodruff House, Dec. 9, 1901.

Watertown, N. Y.

RAYMOND F. COSLER, Secretary.

Harvard Dental Alumni Association.

The thirtieth annual banquet of the Harvard Dental Alumni Association was held in Boston, Mass., June 24th, 1901.

The guest of the evening, Gen. Curtis Guild, Jr., editor *Boston Commercial Bulletin*, spoke upon "The Duties of Liberal Education."

One hundred and twenty-three persons were present.

The following were elected officers for the ensuing year:

President, Henry W. Gillett, Newport, R. I.; Vice-President, Luther D. Sheapard, Boston, Mass.; Secretary, Waldo E. Boardman, Boston, Mass.; Treasurer, Harry S. Parsons, Boston, Mass.

Executive Committee: Waldo E. Boardman, Boston, Mass.; William P. Cooke, Boston, Mass.; Charles E. Perkins, Brockton, Mass.

WALDO E. BOARDMAN, Sec'y.

184 Boylston St., Boston, Mass.

Northern Iowa Dental Society.

At the seventh annual meeting of the Northern Iowa Dental Society, held at Arnold's Park, on Lake Okoboji, September 3, 4 and 5, 1901, the following officers were elected for the ensuing year:

President, J. A. Walter, McGregor; Vice-President, William Finn, Cedar Rapids; Secretary, W. G. Crandall, Spencer; Treasurer, H. W. Rizer, Lansing.

The next annual meeting will be held at Cedar Rapids, September 2, 3 and 4, 1902.

W. G. CRANDALL, Secretary.

Spencer, Iowa.

Now is the time to subscribe for the new volume

2449

Items of Interest

A Monthly . . .
Magazine of
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and Literature . . .

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December
1901

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R. Ottolengui, M.D.S.
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50 W. 49th St.
New York

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IT is undoubtedly your intention to renew, and you should do it now, thereby not allowing it to escape your notice. *The omission of a single copy spoils your entire series.* You have succeeded in laying a foundation of a most useful and valuable dental library, and it would be unfortunate to leave it incomplete when the cost of maintaining it is so small. Continue your subscription and add another book to the gratifying row of bound volumes in your library.

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PUBLISHERS' NOTES



T

HE generous support which the ITEMS OF INTEREST has received from the dental profession during the past year, and the steady increase in the number of its subscribers, together with the hundreds of letters of commendation which reach us from those who re-subscribe, proves conclusively that the magazine is furnishing what is most desired by practitioners in the line of dental literature.

This encourages us to make even further improvement during the coming year over anything that we have ever published before, and from our plans we can prophesy a rich and brilliant twenty-fourth volume.

The ITEMS OF INTEREST has always aimed especially to publish such articles as will be of assistance to the practical dentist in building up and maintaining a remunerative *clientele*. These articles usually are prepared especially for our pages by the most brilliant dental writers available, and in this direction we shall continue to abundantly supply our readers. In addition we will, as heretofore, publish the proceedings of important dental societies, and the news and practical advance of dentistry throughout the world.

Our advantageous position in the dental trade, and our unlimited sources of information from all parts of the globe, give us an unusual and valuable opportunity to learn the wants as well as the opinions of the dental profession, and no dentist can keep better posted than by closely following the pages of ITEMS OF INTEREST.

The great variety of subjects which we are thus able to place before our readers will constitute in the ITEMS OF INTEREST a most comprehensive compendium of the science of modern dentistry, and we feel confident that, with these prospects in mind, those who have read the twenty-third volume, and those who contemplate reading the choicest and most valuable dental literature, will not hesitate at the low cost of One Dollar (\$1.00) to promptly subscribe to the ITEMS OF INTEREST for 1902.

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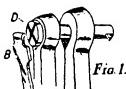
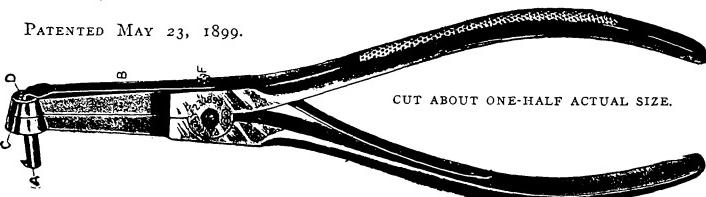
BRANCHES IN NEW YORK, KANSAS CITY, BALTIMORE, NEW ORLEANS,
CHICAGO; LONDON, Eng.; MONTREAL, QUE.

Branch Laboratories: Hounslow Eng.; Walkerville, Ont.

Crown Slitting Forceps.

PATENTED MAY 23, 1899.

Catalogue
653 A
Number.



Fia. 1.



Fia. 2.



Fia. 3.



Fia. 4.



Fia. 5.

These forceps are entirely unique and superior to anything on the market for removing gold crowns. The small knife blade point is inserted under the cervical edge and the plier rim is rested upon the occlusal end of the crown. Then by simply compressing the handles of the forceps the crown is easily slit lengthwise. In this way a crown or bridge anchorage can be readily and neatly removed and the slit crown replaced if wished, by soldering the slit edges of the crown after bringing them together. The great advantage of this slitter is the fact that by turning the knife, the front side or rear of a crown may be slit with equal ease, and furthermore the point of the knife can not slip off of the crown. All parts of the mouth can be reached with equal facility and without any danger of cutting the cheeks, as the rim prevents the knife from touching the cheeks, should it slip. Extra knives can be procured at a small cost should they become dull.

The knife "A" is to be inserted under the cervical edge of the crown and the rim "C" rested upon the occlusal end of the crown. By lifting the spring "B" the knife may be turned in any position so as to cut any part of the crown or reach any tooth with equal facility. The slit "D" in the top of the knife piece prevents it from turning. The knife piece can be taken out or replaced by lifting the spring "B" and turning it on Fig. "F."

This forcep is made so that it can be taken apart easily and each piece thoroughly cleansed and rendered aseptic.

Figs. 1, 2, 3, 4 and 5 show the different positions of the knife.

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EXTRA KNIVES, .50



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STYLE "A."

An Improved Apparatus for making Seamless Contour Crowns.

No. 625a



CROWNING SYSTEM, \$15.00. SHAPING HAMMER EXTRA, \$1.00

The usual draw plate, punches and die plate are parts of this system, but besides these there are 32 metal teeth furnished which are used to shape the crown after it has been drawn on the steel draw plate. By means of these teeth crowns can be made for the Central, Lateral and Canine teeth. This feature, which is not a part of any other system, makes it superior to all.

The system is put up in a finely finished oak case.

By following the instructions which we furnish with each outfit, any dentist can, with a little practice, produce a perfect crown; little or no skill being required in its use.

We manufacture a small shaping hammer with a round head especially adapted for use in connection with shaping crowns over the metal teeth in this system.

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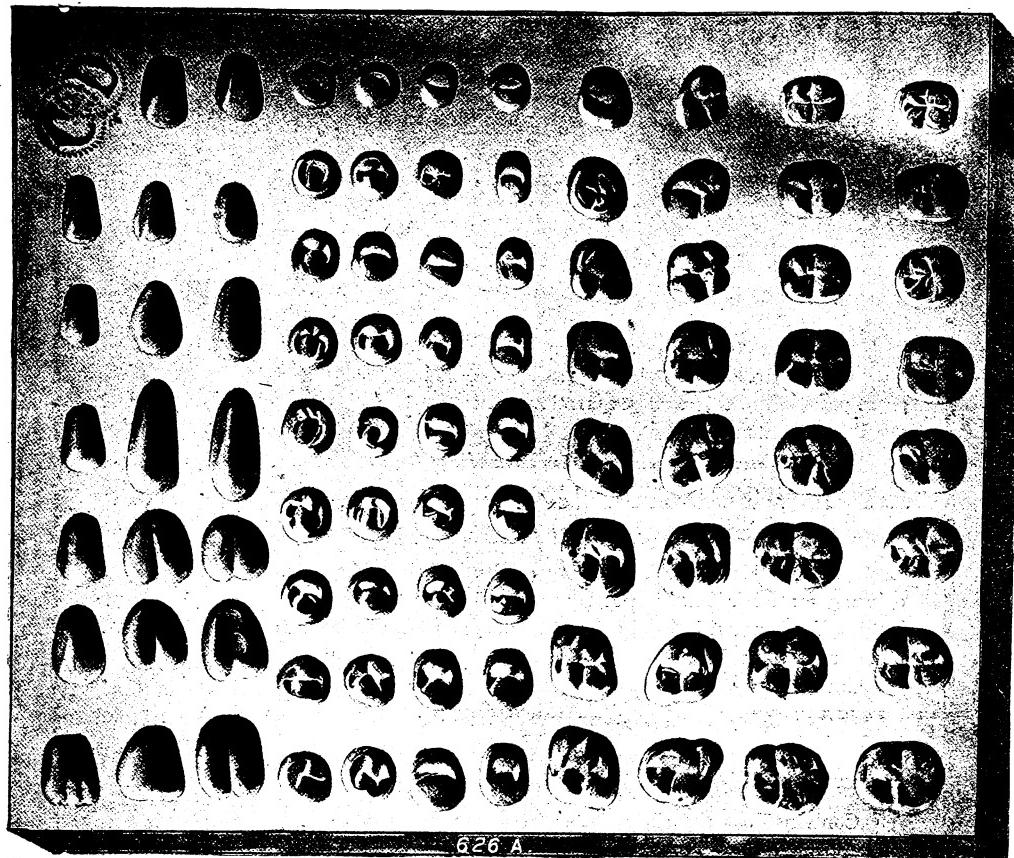
**STICKY WAX. For putting Impressions together,
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Plate, especially Metal Work**

Mending rubber dam, sticking it to the tooth or gum, for attaching the porcelain to the gold in crown and bridge work, etc., etc.

This wax is in the form of round sticks of convenient size and form for the purpose intended. Price, per box, 35 cents.

C. D. M. CO.

CROWN SYSTEM



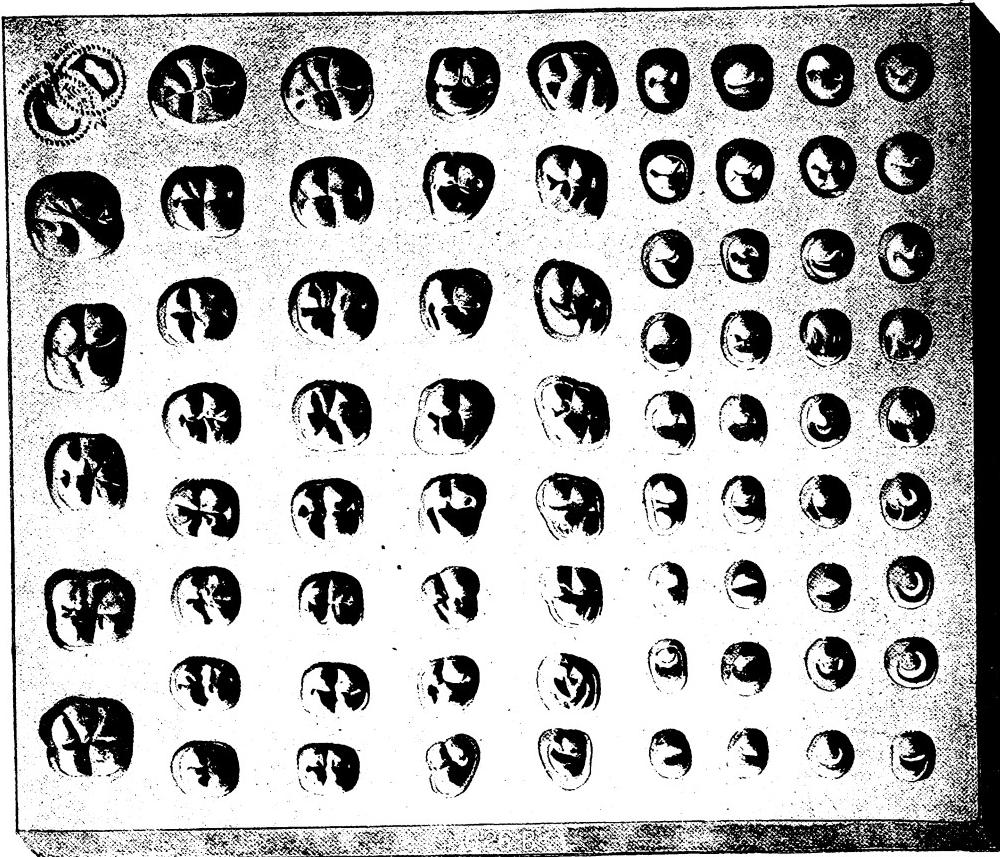
626 A

These Die Plates furnish to the profession an exceptionally large assortment of Cusps to be used in conjunction with Crown Systems, and are a valuable adjunct in connection with the use of our well known Seamless Crown Outfit. The amount of time saved by their use is the feature that renders this System superior to other methods for making perfect Seamless Crowns. **• • •** Particular attention has been paid to the contours, and we place these Plates on the market with the firm belief that any Crown required, barring exceptional cases, may be turned out with them.

In 626A the indentations are shallow, for striking up the cusps only when banded crowns are to be made.

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DIE PLATES



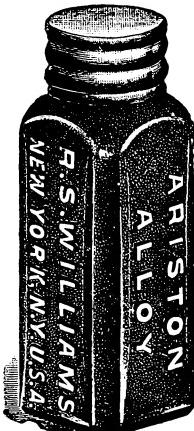
Every dentist may have the art of perfect Crown making at his command with their use, and the explicit instructions and directions which go with our Crown System show how simple the method is, and how little skill is required to make perfect Crowns. These plates are nickel-plated and will not discolor when exposed, and are easy to keep clean. PRICE \$5.00 EACH.

In 626B the cusps are deep, being admirably adapted for making complete seamless gold crowns.

R. S. Williams'

Mixes well either in the hand or mortar, forming a smooth plastic.

The working quality is excellent, because this alloy is not injured by using enough mercury to produce *complete amalgamation*. Equal parts by weight of filings and mercury give the best results. There is no need to use the amalgam made of this Alloy so dry that it crumbles and is troublesome to use in cavities difficult of access; in fact it spreads better under the instrument and unites better when there is just enough mercury to make a



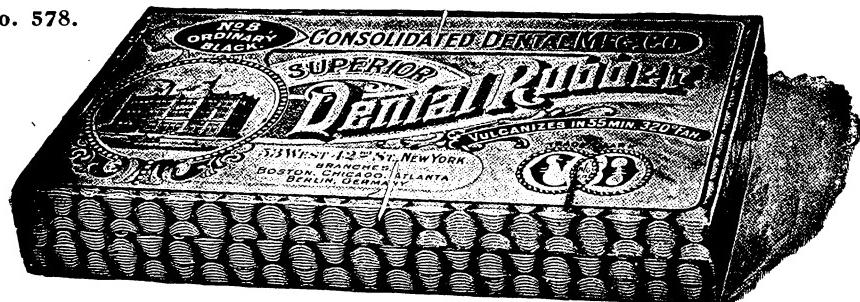
plastic cohesive ball, but not so much mercury that it can be readily squeezed out by pressure between the thumb and fingers. When used too dry, the amalgam is liable to bridge over like cohesive gold, leaving pit holes which cause leakage.

Ariston Alloy is made in the form of filings only; it is put up in ounce and half-ounce screw-capped glass vials, and may be ordered from the Consolidated Dental Mfg. Co. or any of their branches, agencies or correspondents throughout the world.

The price is \$3.00 per Troy ounce; two ounces, \$5.50; four ounces, \$10.00.

Ariston Alloy

No. 578.



We make only one grade of Consolidated Dental Rubber—and that grade is the best grade. We make the following varieties of colors, and indicate them by numbers:

No. 1, Light Orange.
No. 5, Mottled (Dark Red).
No. 5, Light Pink.

No. 2, Medium Orange.
No. 6, Maroon.
No. 10, Medium Pink.
No. 13, Weighted (Light).

No. 3, Dark Orange.
No. 7, Jet Black.
No. 11, Dark Pink.

No. 4, Mottled (Light Red).
No. 8, Ordinary Black.
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Nos. 1, 2, 3, 4, 5, 6, 7, 8.....	per pound, \$2 25
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CRESCENT Alloy is a combination of metals mainly silver and tin mixed in such proportions as to give the most desirable results. It is a strong alloy which expands slightly in setting, sufficient to insure a permanent position in the cavity. It has a silver-white color, which it retains. Put up in shavings or filings in bottles holding one ounce.

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Gold-faced Platinum, which is Pure Gold on one side and Pure Platinum on the other, equal parts, is useful for Crown and Bands, because it can be soldered without danger of melting, gives the exact color of fine gold and can be filled inside with amalgam, which will not act on the Platinum. Price, per dwt., \$1.15.

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Plate	Prices fluctuate
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Any gauge desired. Price, per dwt.....\$.08

ALUMINUM PLATE.

No. 22 and No. 24, B. & S. Standard Gauge,	
Price, per oz.	\$.20

DESENSITOR.

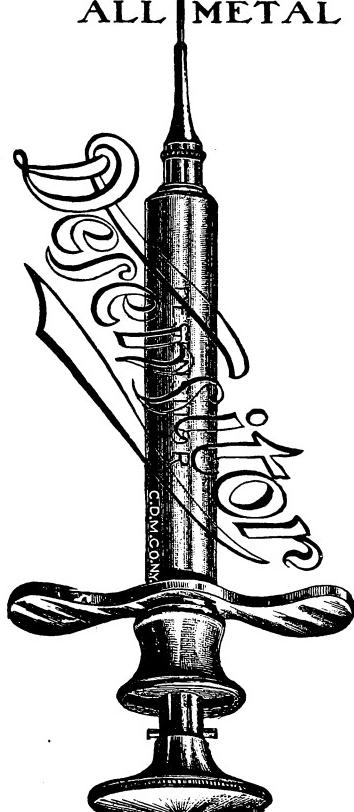
Desensitor is a harmless local anæsthetic, composed of Hamamelis, Alcohol, Iodoform, Baptista, and one per cent. Cocaine, compounded together, for desensitizing the gum tissues while extracting teeth. Desensitor will not produce sloughing of the gums or any other injurious effects.

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HYPODERMIC SYRINGE.

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Which contributes to the desiderata of **ARTIFICIAL TEETH**,
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Gum Plate					
PLAIN TEETH, LONG PINS (FLAT BACKS).					
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Plain Veneers, Bicuspid and Molars16	.15½	.15	.14	.13
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CROWNS.					
Davis, with pin40			Case of 100, \$35.00	
MISCELLANEOUS.					
Colored Teeth for Exhibition sets,16				
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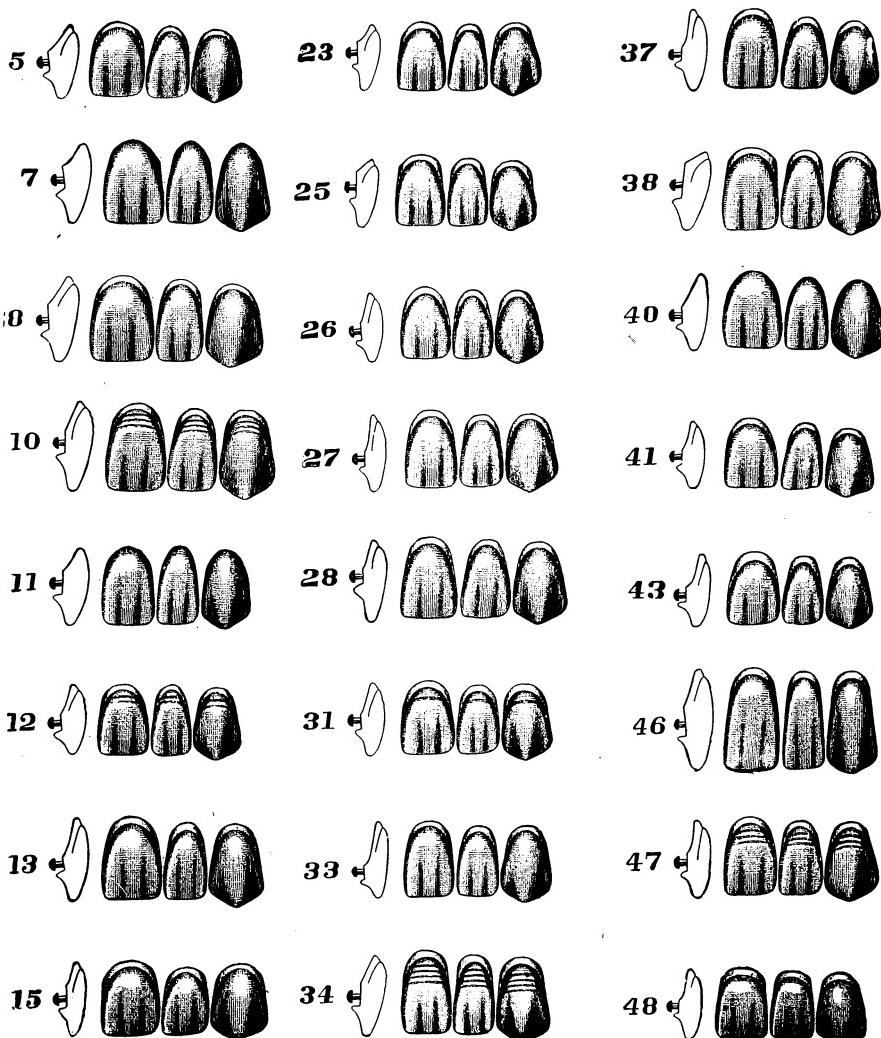
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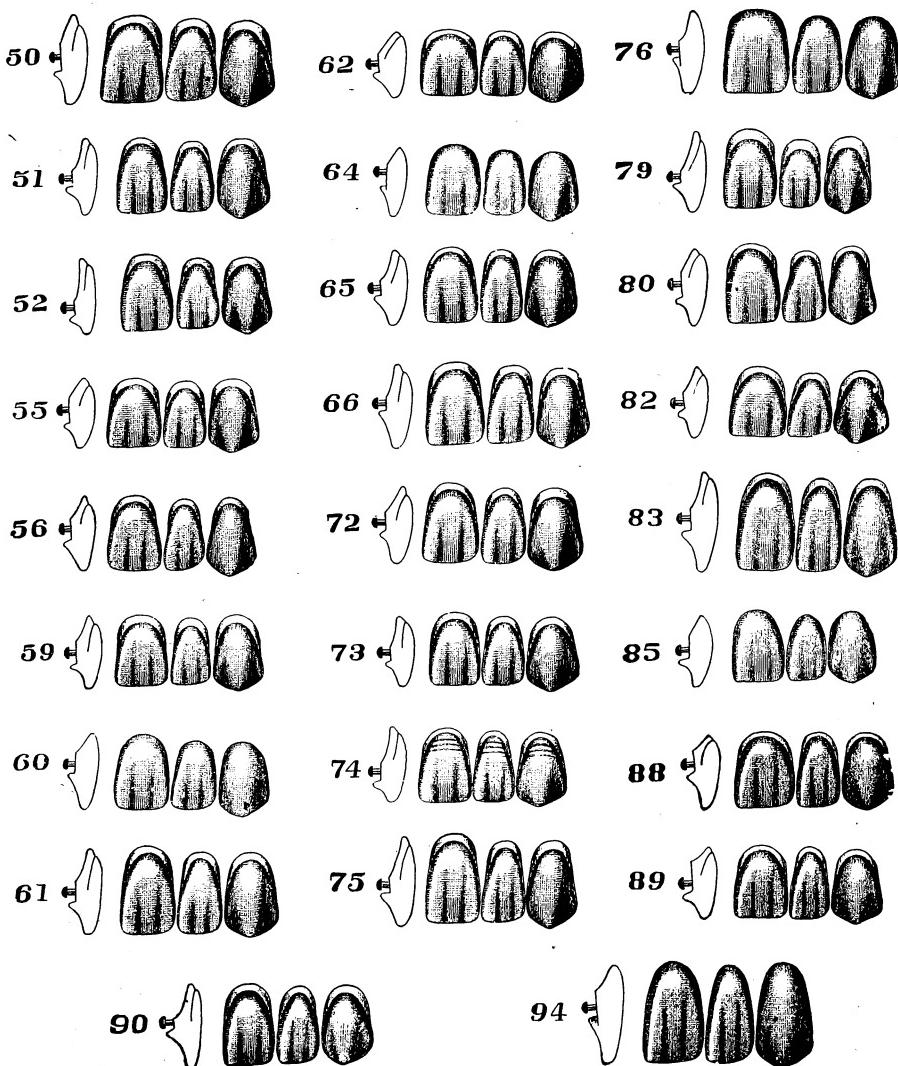


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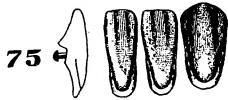
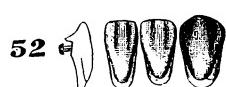
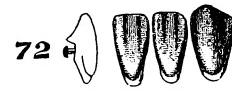
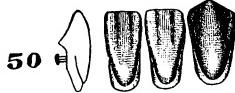
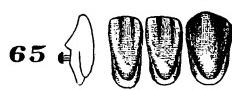
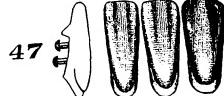
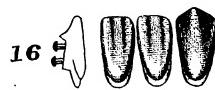
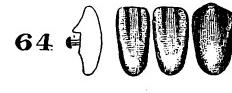
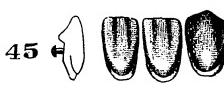
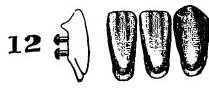
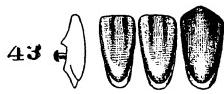
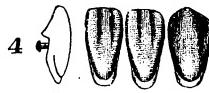
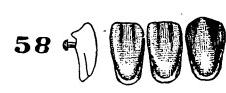
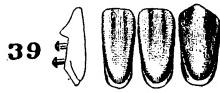
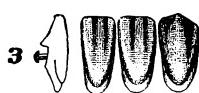
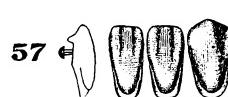


Consolidated Dental Manufacturing Co.'s Porcelain Teeth

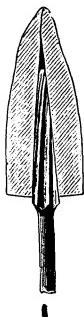
PLAIN RUBBER LOWERS

Illustrations of Moulds Most Frequently Used

(In Sets of 14s.)



DR. CHAS. A. DAVIS' PATENT SHOULDER PIN CROWN



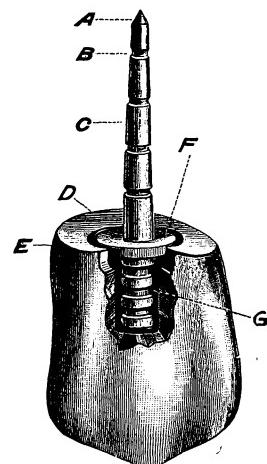
4



2



3



5



6



7



8



In the enlarged illustration A shows the point of the Davis pin, which is tapered so as to enter the canal readily, and B, one of the corrugations as they appear in the pin; D illustrates the elevated rim of the crown, the top of which is concave; F, the shoulder of the pin, which is in the shape of a concave flange and permits of a secure cement fastening to the root; and G, the portion of pin which is inserted into the crown, showing corrugations, etc.

DAVIS CROWN

BY DR. W. E. WILLMOTT, TORONTO, CAN.

Read before the Toronto Dental Society, March 12th, 1901.

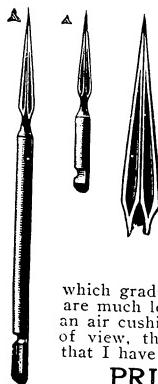
I have been requested by the president to present to you this evening for discussion the Davis Crown. This is one of those porcelain crowns in which the pin is entirely separate from the crown. (Described the crown from drawing on blackboard.) At our last meeting the Logan crown was presented, and in the discussion one member condemned it on account of the pulling away of the pin from the porcelain in the centre of the crown, due to the contraction of the metal while cooling. This objection cannot hold with the Davis crown.

"Every dentist knows of the difficulties incident to making a perfect fit of a porcelain crown to a natural root when the pin is baked into the crown. No matter how careful he may be in grinding up the crown for the case in hand the pin is always in the way to prevent that accuracy in the adaptation of the crown necessary for the best results. With the Davis crown the pin is an afterthought. The crown can be handled in every convenient manner. You can grind it in any direction, and a perfect fit can be made in half the time, as with one of those furnished with the pin fastened in. Then, after the crown is ground to fit the root, the pin can be set and cemented in any position required."

How often we see a porcelain crown inclined forward, due to the bending of the pin. This danger is, to a great extent, overcome by the concave shoulder on the pin in the Davis crown. Also, when the pin is not baked into the crown a stiffer and stronger pin than platinum can be used. And on account of its being stronger and stiffer a smaller pin may be used, thus avoiding enlarging the root canal very much and thus weakening the root. Another advantage of this crown is that if it is necessary to grind the face of the porcelain, it can be polished again almost equal to its original appearance. Considerable exception has been taken to any crown where the root is not protected, as with a cap and band. It is a very simple matter to band a Davis. Make the cap and band as usual and pass the pin through till the shoulder rests on the cap and solder then cement the crown to the pin. The great advantage claimed for the Davis, however, is the ease with which a broken crown may be replaced. In the other forms the pin has to be removed from the root, which is often a very difficult operation, and which weakens the root, but in this case we have only to select another crown, grind to fit root, and cement in place as at first.

Referring again to the discussion on the Logan crown at the last meeting, one member insisted on combating the idea, which had never been even hinted at, that the Logan was suitable for every case. Now in case some one should waste the time of this meeting repeating this criticism, I wish it distinctly understood that while I consider the Davis the most convenient, and for many cases the best porcelain crown on the market, I do not claim it has a universal application.

Reprint from DOMINION DENTAL JOURNAL.



PULP-CANAL REAMER

Devised by Dr. J. Leon Williams

In describing this instrument Dr. Williams says: "It is a modification of the three-sided reamer, but the modification is much the most important feature of the tool. Each of the three sides is deeply grooved. The result of this grooving is two-fold. It makes an instrument which is as easily sharpened as an excavator, and which can, therefore, be kept in the finest cutting condition until worn out. The grooves also render the tool self-clearing. It never clogs, it cuts very rapidly, and there is not the slightest danger of forcing it through the side or end of the root. It leaves roots which have a curvature at the end in the best possible condition for treatment with sulphuric acid or by any other method, i. e., with a large cone-shaped opening giving an abundance of room for working and seeing. It cuts away more of the infected dentine with less destruction of the root than can be accomplished by the use of any other instrument. And, finally, it leaves the root canal exactly the shape required for the strongest and best form of pin for crown-work—a pin which is largest and strongest where it joins the crown and which gradually tapers to a fine point in the end of the root. Crowns with a pin of this shape are much less liable to get loose because the pin can be made much longer. Also, one never finds an air cushion beneath a pin of this shape when cementing a crown in place. From every point of view, therefore, I regard this as much the most valuable instrument for opening pulp canals that I have ever used."

PRICE, EACH

60 CENTS

THE BRYANT NERVE CANAL DRILL

(Patented.)

**TO THE
PROFESSION**

The following is Dr. Bryant's statement concerning his drills:
To the Profession:—While other canal drills are formed to resemble a cone or bud shape, having the greatest resistance at the base of the drill head, causing them to bind and choke up in the canal, and requiring so much forward pressure to enter the canal as to greatly increase the liability of twisting or breaking off the blades, we offer a canal drill based strictly on a mechanical principle, viz., a cone base to base.

This drill being thus shaped meets the greatest resistance at the center of the drill head, the cutting blade gradually increasing in width and increasing in thickness from the non-cutting or safety point to the center of the drill head, then, gradually decreasing in width and decreasing in thickness, to the base of the drill head; allowing the point of greatest resistance to come on the cutting-blades, at the center of the drill head where they are strongest, which enables the drill to enter the canal so evenly and rapidly that it requires about one-third of the forward pressure to enter a canal that is required of other drills.

These drills are especially designed to facilitate the operator in preparing all dead teeth and roots of teeth valuable for the retention of porcelain crowns, bridge work, etc., which becomes so laborious and unsuccessful with other drills.

Our testimonials endorse all we claim for this drill, viz., a ready follower, a rapid cutter, complete ease of penetration, positively will not clog up in the canal, throwing all canal contents directly backward and down the canal; when dull, can be sharpened by running a fine emery disk on the cutting blades with a dental engine; they are made with a requisite size shank to insure strength for all work called upon, with enough flexibility of shank to properly follow and cut tortuous canals. They comprise a set of six numbers in straight drills for use in the canals of the upper teeth, also a set of six numbers to be used in the right-angle attachment for the canals of the lower teeth.

In preparing the canals of the different teeth we advise the use of several numbers, especially so in the canals of lateral, bicuspid and molar teeth. Their perfect adaptation and durability with the ease of their rapid cutting, the saving of time and labor to the operator, with assured success in all operations for which they are designed, without that constant dread of breaking or twisting off in the canal, will commend them to all conscientious and progressive operators for a trial.

Your patients will pay you a good price to save a dead tooth, or a root that is valuable for capping or crowning, even any method proposed by you to escape extraction. If you have had failures with other drills, try these and be assured of success, and success means the gratitude of your patient with a greater income to yourself.

My experience teaches that no part of dentistry will advertise your fame so largely and thoroughly as successful operations which, in saving extraction, promote the continued use of the natural teeth.

CHARLES H. BRYANT.

PRICE, EACH, 50 CENTS

Modelling Composition



Catalogue No. 560

It isn't sticky
It doesn't crawl
It doesn't expand
It doesn't shrink
Its impressions are permanent

It is the most agreeable to the patient

Its quality is beyond reproach
Its reliability sells it
Its popularity is surprising
Its sales are steadily increasing
Its price is nominal

Price per pound, 75 cts. By mail, 8 cts. extra per half pound, for postage

The No. 1, or very soft grade, is used for restoring composition that may have become hard by frequent use; the restoration being accomplished by heating in hot water.

The No. 2 is MOST UNIVERSALLY USED, being of medium flexibility, neither yielding too easily to pressure nor too firm in resisting.

The No. 3, or hard grade, is good in warm weather.

We wish to invite the Dental profession to take particular notice of a few points in

THE MERKER DENTAL CHAIR

1—The general appearance, which is a combination of thorough practicability and artistic design.

2—The few levers that are required and the handy positions they are placed in.

3—The Head Rest is self-locking and adjustable by the patient. We claim that a head rest is as hard to adjust to a patient's head as it is to place another man's hat upon his head comfortably.

4—The upholstering we especially invite you to compare with other Dental Chairs, for we know that it leads both in quality and workmanship.

5—The Japanning, decoration, nickel plating and general workmanship are unexcelled.

In the following illustrations, we have endeavored to show a few of the features of the MERKER CHAIR. Our best description, however, could not do it justice. It must be seen to be fully appreciated.

The MERKER CHAIR is furnished only with the MERKER SELF-LOCKING SECTIONAL HEAD REST

Price of Chairs.

Best Quality Mohair Plush with Wilton Carpet.....	\$175.00
Best Quality Green Plush with Wilton Carpet.....	180.00
Seal Leather, Green or Tan, with Wilton Carpet to Match.....	182.00

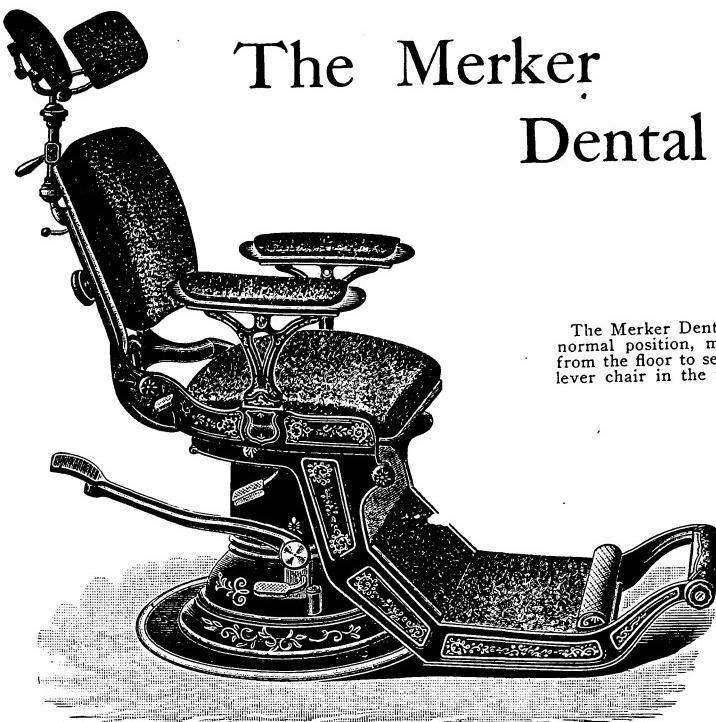
We furnish any of the above upholstering with Chair specially decorated at a very moderate additional cost.

Consolidated Dental Mfg. Co.

115 West 42d Street,

New York

The Merker Dental Chair



The Merker Dental Chair in its lowest normal position, measuring $17\frac{1}{2}$ inches from the floor to seat. The lowest pedal lever chair in the world.



This shows the Child's Seat brought up in position for operating on the smallest child. This is a novel feature that is practical in every respect, and a position that no other Dental chair has ever been able to give. It does not interfere with any of the regular positions in the chair, and folds down entirely out of the way. It cannot be noticed when not in use, as can be observed in the above illustration.

The Merker Dental Chair

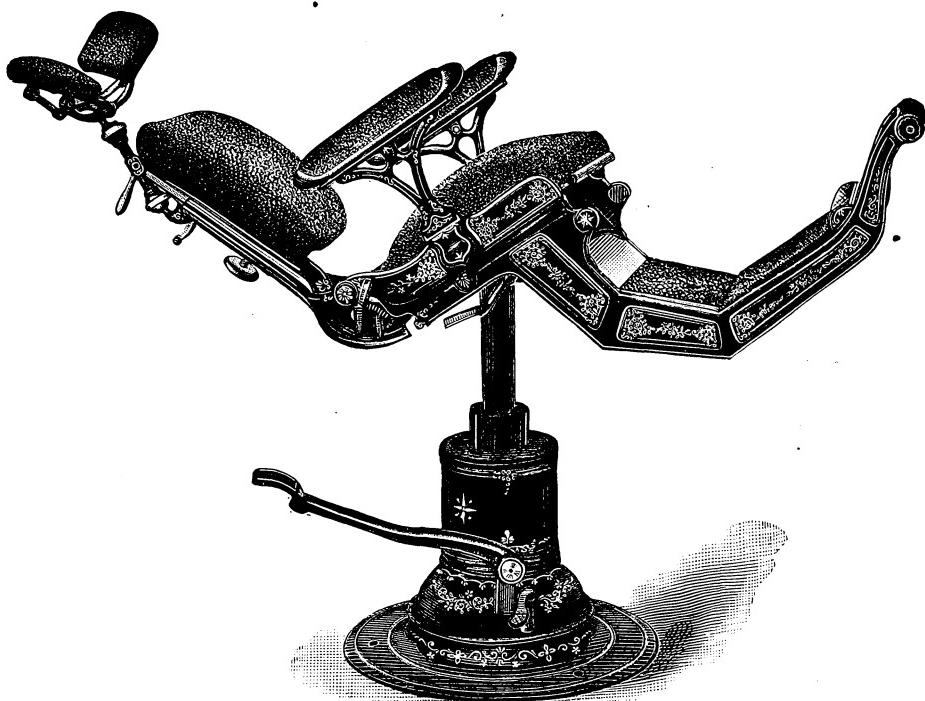
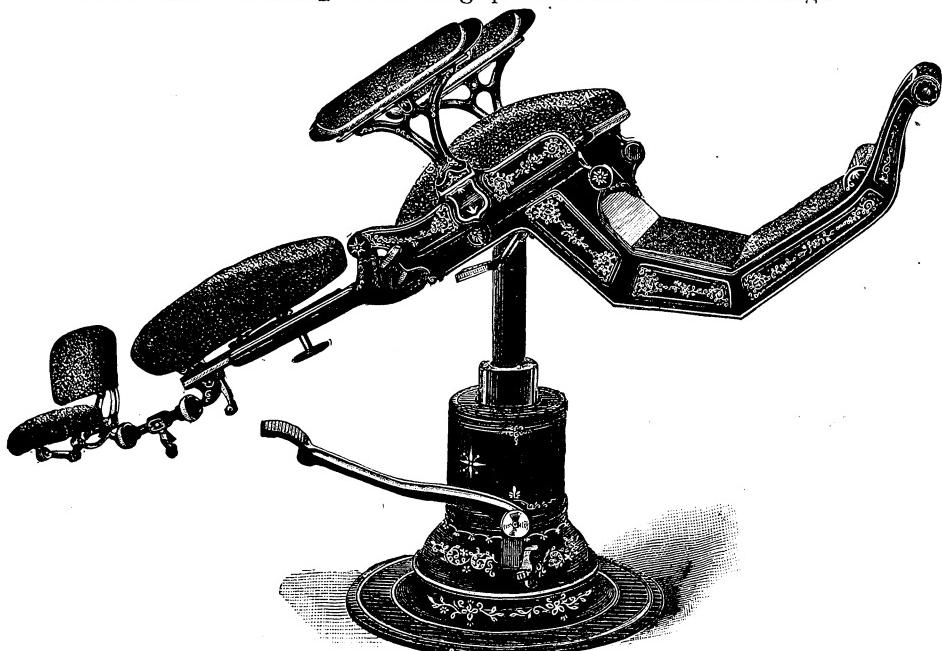


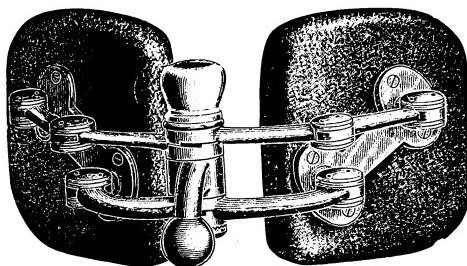
Illustration showing a reclining position at a medium height.



This illustration shows the most complete Chloroform Narcosis position that has ever been given in any Dental Chair.

The MERKER CHAIR is the only Dental Chair fitted with a truly Self-Adjusting Head Rest

This is a head rest that will give comfort to the patient and consequent ease of operation to the dentist. It is absolutely self-adjusting by the patient; the mere placing of the head upon the pads locking them firmly in the desired position.



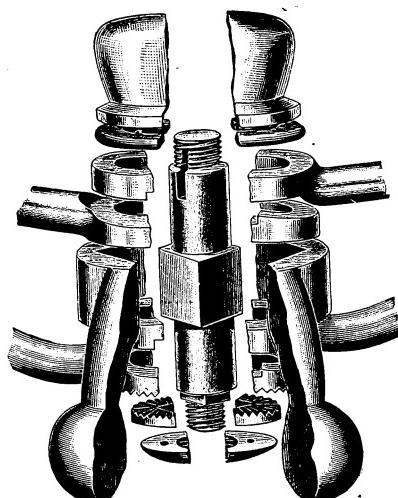
above and below the center. The underside of each pad has a square hole through which fits the square part of the center post; sufficient space is allowed for the slight up and down movement of this post, necessary to take up the expansion and contraction of the two cam joints when the pads are being adjusted at different angles.

The ball socket shank has a square hole through its center into which fits the square part of the center post; sufficient space is allowed for the slight up and down movement of this post, necessary to take up the expansion and contraction of the two cam joints when the pads are being adjusted at different angles.

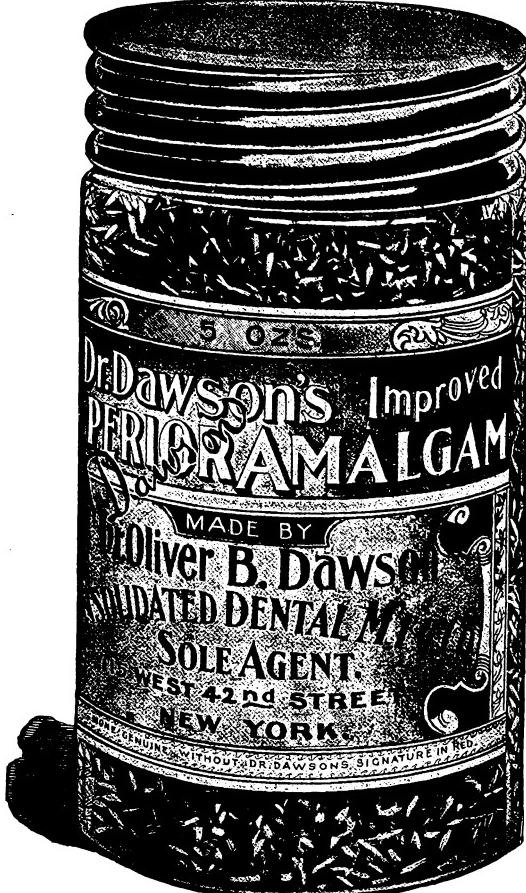
The small hand screw at top of locking device needs only be loosened or tightened when the space between the pads needs to be changed to fit the head; ordinarily it need never be touched, as the ample adjustment of the head rest gives the necessary comfort. This screw will not tighten through use; this is prevented by the washer shown.

To adjust the head rest place chair and head rest at desired angle; let the patient put a hand under each pad, slightly draw the pads toward each other, arrange the head comfortably in any desired position, let go the pads, and they are locked immediately. The "face" position is secured by pressing the pads together (this disconnects the teeth on the lower lever and base, allowing the levers to pivot) pushing both to the desired side, drawing apart as far as necessary, and the head locks them into position. The weight of the head forces the levers outward, which brings the cam joints together, thus wedging all tightly against the toothed surfaces at the bottom and screw at the top.

Fig. 1 shows the complete head rest. Each pad is 4 x 5 inches, upholstered to correspond to the upholstery of the chair, and placed upon the levers, as illustrated; the working of these levers is well shown in Fig. 2. Each lever has an incline taper on its supporting end, and each pair of levers form a cam joint. The locking device consists of a center post on which the levers pivot



THE SELF-ADJUSTING HEAD REST IS FURNISHED WITH
THE MERKER CHAIR ONLY



5 oz. Jar. Price, \$10.00.

Dr. DAWSON'S Improved Superior Amalgam.

*A SUPERIOR LOW-PRICED
METALLIC FILLING.*

As long ago as 1876, Dr. Dawson's Superior Amalgam was a dental favorite. Its popularity was then largely due to the fact that it was made by Dr. Dawson himself; and that's one of the reasons for its popularity now.

PRICES.	
5 oz. Handsome Screw-capped Glass Jar	\$10.00
1 oz. Screw-capped Glass Jar, or in Envelope	2.50
½ oz. Sample Package	1.00

“The Teeth”

A Treatise by T. B. WELCH, M.D.

This is a little book of 36 pages, designed for gratuitous circulation by dentists. It is full of instruction that every one should know, and we have found that the result of giving away such a book is sure to bring good returns to the dentist.

We will supply them at the following

PRICES.

One copy for sample.....	.06
One hundred copies.....	3.50
Five hundred copies.....	15.00

The last three pages are devoted to the excellence of nitrous oxide gas; if this is not desired, it is easily removed.

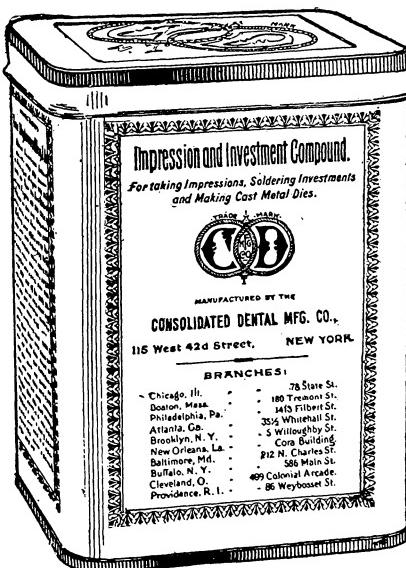
CONSOLIDATED DENTAL MFG. CO.'S

IMPRESSION AND INVESTMENT

Compound.

For taking Impressions,
Soldering Investments
and Making Cast Metal
Dies. ♦ ♦ ♦ ♦ ♦ ♦ ♦

Its smoothness permits its spreading evenly and freely into the spaces between the teeth or fissures in the crowns, overcoming all the annoyance incident to the use of plaster. . . .



This compound will be found invaluable as a substitute for plaster for impressions, etc., being superior in many respects. ♦ ♦ ♦ ♦ ♦ ♦ ♦

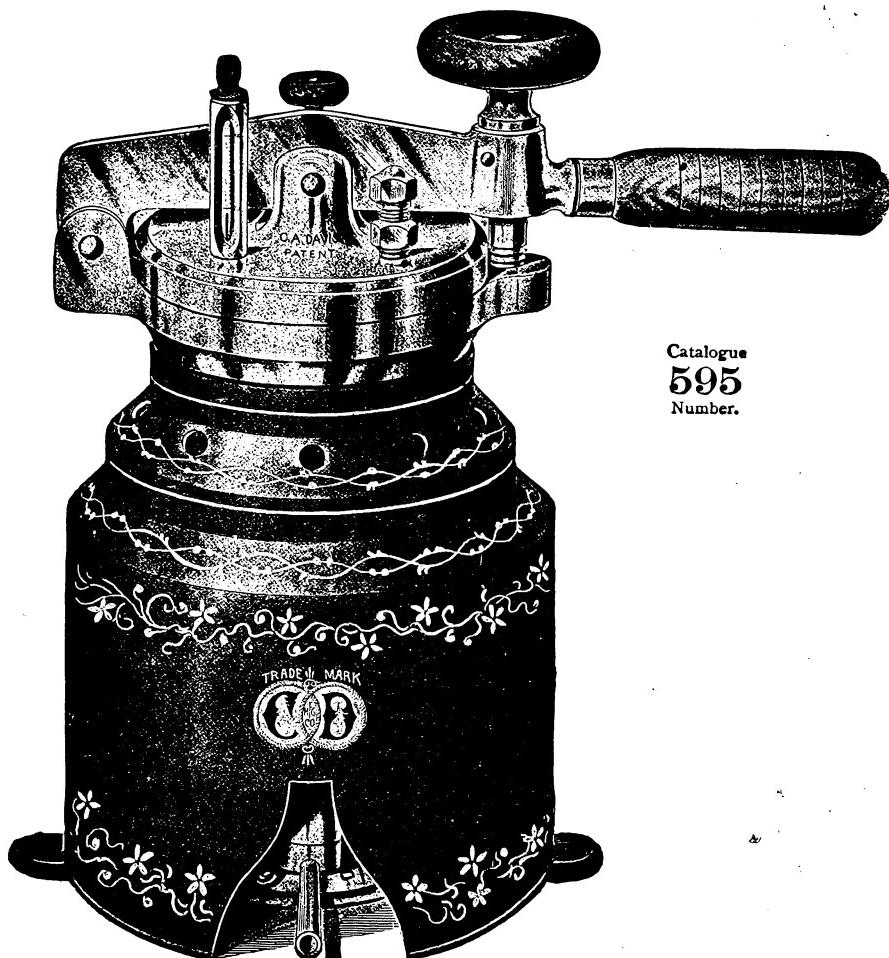
It DOES NOT ADHERE to the teeth, but gives an impression of the mouth, which, for evenness of surface and glossy appearance, surpasses anything that can be obtained with plaster. . . .

Put up in neat tins. Price per can, about one quart or two pounds, 25 cents. Large size can, containing ten pounds, \$1.00. ♦ ♦ ♦

It is especially advantageous for soldering investments and making cast metal dies. The finished die made from this compound shows EVERY LINE, TOOTH and UNDERCUT, SHARP, DISTINCT and SMOOTH. ♦ ♦ ♦ ♦ ♦ ♦ ♦ ♦

DR. CHAS. A. DAVIS'

Improved Cross-Bar Vulcanizer.

Patented, March 20, 1894.

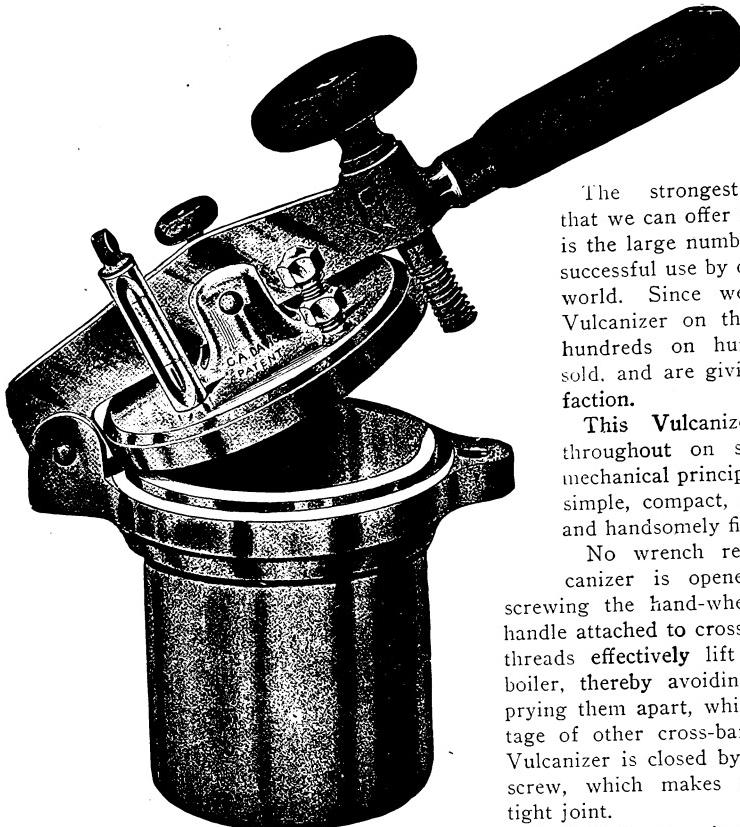
Catalogue
595
Number.

PRICES.

3-Case Vulcanizer, for Gas or Kerosene	\$20.00
2-Case Vulcanizer, for Gas.....	18.00
3-Case Vulcanizer, with Gas Regulator and Timing Attachment.....	28.00
2-Case Vulcanizer, with Gas Regulator and Timing Attachment.....	26.00
3-Case Vulcanizer, with Steam Guage	24.00
2-Case Vulcanizer, with Steam Guage	22.00

Dr. Chas. A. Davis' Improved Cross-Bar Vulcanizer.

(CONTINUED.)



The strongest recommendation that we can offer for this Vulcanizer is the large number that are now in successful use by dentists all over the world. Since we first placed the Vulcanizer on the market in 1897, hundreds on hundreds have been sold, and are giving universal satisfaction.

This Vulcanizer is constructed throughout on scientific and best mechanical principles. It is extremely simple, compact, durable, well-made and handsomely finished.

No wrench required. The Vulcanizer is opened by simply unscrewing the hand-wheel and lifting the handle attached to cross-bar. The two last threads effectively lift the lid from the boiler, thereby avoiding the necessity of prying them apart, which is the disadvantage of other cross-bar vulcanizers. The Vulcanizer is closed by turning down this screw, which makes a perfectly steam-tight joint.

Each Vulcanizer is regularly furnished with the Davis Improved Thermometer, a substantial Blow-off Valve and a Safety Valve. The Safety Valve contains a thin metal disk which will give way under excessive pressure of steam and thus prevent an explosion. When so ordered, our Gas Regulator, with Timing Attachment, or our special Steam Gauge, will be added, at extra cost indicated in list of prices.

The Boiler or Pot is seamless and extra heavy. The entire lower part below the lid is made in one solid piece, thus avoiding any opportunity for a weak joint or leakage if the collar were brazed to the pot, as in other cross-bar vulcanizers. The inside diameter of the boiler is $4\frac{1}{4}$ inches, sufficient to take the largest flasks, and is of sufficient depth to admit the Donham Spring.

The cross-bar is made of extremely hard gun metal and is constructed on scientific principles, being heavily reinforced at the center, where the greatest pressure is exerted. The handle of the cross-bar is hard wood, of suitable size. It is securely fastened to the cross-bar by means of a bolt and blind nut, which is countersunk within the end of the handle, making it impossible to burn the hand grasping the same. The hand-wheel screw and tapered bolts which hold the bar to the boiler and lid to the bar are of the best cast steel. The wooden hand-wheel is securely fastened to the screw and can be operated without further protection from the heat.

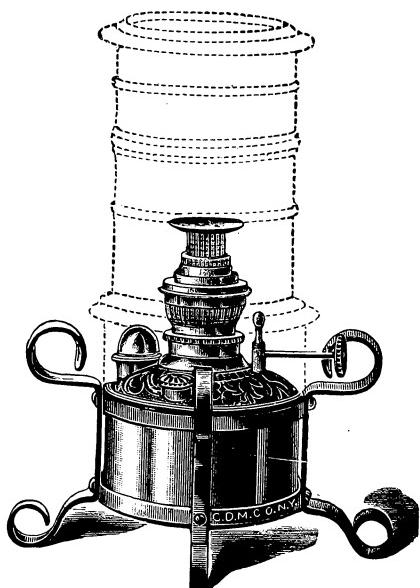
Dr. Chas. A. Davis' Improved Cross-Bar Vulcanizer.

THE

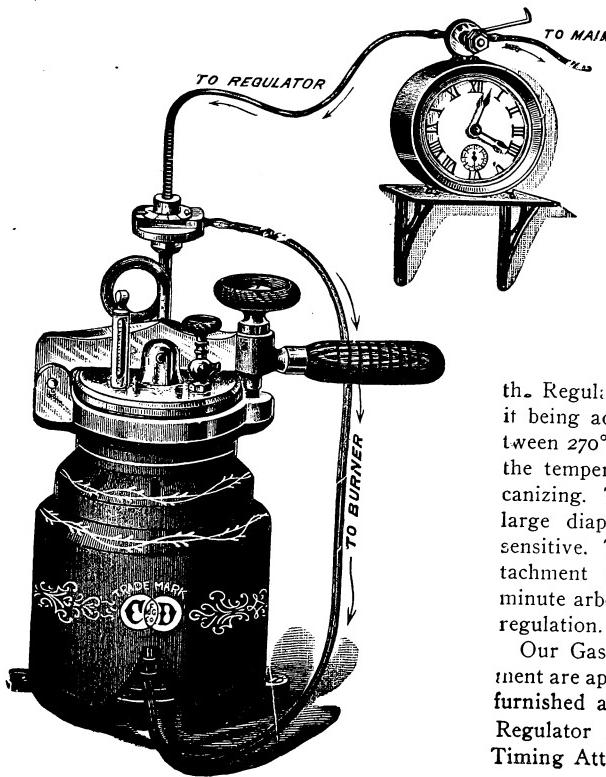
KEROSENE HEATING ARRANGEMENT.

We would invite particular attention to the unique kerosene heating arrangement as furnished with this Vulcanizer. It consists of an improved kerosene lamp, constructed on the standard center-draught principle. It gives intense heat and the flame can be regulated to a nicety. The oil reservoir has an indicator showing when it is full, and empty, which is an advantage when refilling. The iron stand is light, strong and of neat form. The jacket is made of sheet iron, and has an isinglass door convenient to the burner. This kerosene arrangement is a great improvement over anything ever before furnished for vulcanizers where gas is not used.

Price, \$4.00.



THE GAS REGULATOR.



We illustrate herewith the Davis Improved Cross-bar Vulcanizer fitted with our Gas Regulator and Timing Attachment. The Gas Regulator checks the flow of gas so as to hold the temperature of the Vulcanizer at the degree desired. The Timing Attachment shuts off the flow of gas at the right time. If a higher or lower temperature is desired the Regulator can be adjusted accordingly, it being adjustable to any temperature between 270° and 330° , this range comprising the temperatures applicable to dental vulcanizing. The Gas Regulator has an extra large diaphragm, rendering it extremely sensitive. The gas valve of the Timing Attachment is operated by the threaded minute arbor and is capable of very delicate regulation.

Our Gas Regulator and Timing Attachment are applicable to any vulcanizer and are furnished at the price of \$8.00.

Regulator	\$5.00
Timing Attachment	3.50



JOHNSON Driving Spring

FOR FLEXIBLE ATTACHMENT

A dentist who wants his engine to run properly and get from it the service for which it was intended, should use our Johnson Driving Spring in the flexible attachment of his cable.

This Spring is specially manufactured by us, to supply the profession with an article, which will not "bind," and also avoid the weakness which dentists have been obliged to tolerate with other Springs now in use.

Many of the ailments of a "jerky" or otherwise troublesome cable may be traced directly to the spring in the flexible attachment.

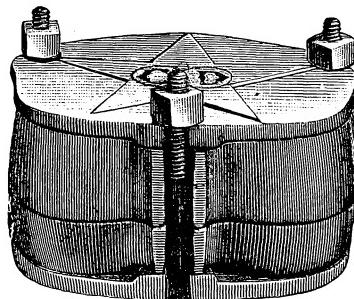
Our Johnson Spring is stiff and strong and of the requisite flexibility. It is just the right size, and no power is lost with it.

You should try one, especially as ours cost but 10 cents each



STAR REVERSIBLE FLASK

The many advantages of the Star Reversible Flask should not be overlooked by dentists who want to be up to date and economical and adopt the most approved methods in laboratory work. These Flasks are so convenient and labor saving because they are made in four parts: two plates and two revers-



ible rings. The rings are of different widths; one is narrow and adaptable to whole dentures, the other is wider and admirable for deep cases and partial sets. As both fit the top or bottom plate, either may be used for the upper or lower part of the Flask, as desired by the dentist.

The removable upper and bottom plates allow of the dislodging of the plaster with the greatest ease, and avoid troublesome digging, which is necessary in the ordinary cup shape bottom rings. With this advantage, the plaster may thus be taken out through either the top or bottom of the Flask.

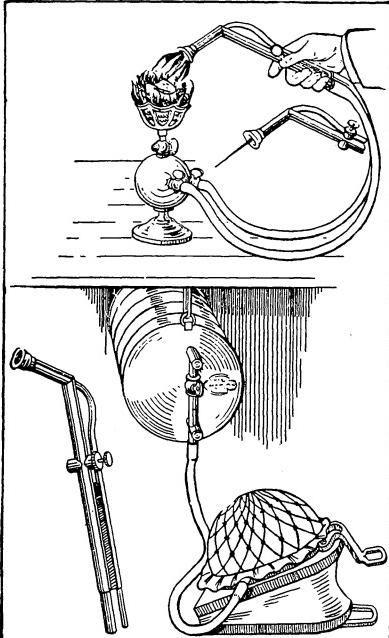
The whole is fastened by three bolts which are rigidly held in place in sockets when tightened, but entirely removable when loose. Each bolt has three holes, through which the plaster runs when in the Flask Press.

Price, Nickel Dipped - - - 75 Cents

*"It is the only Blow Pipe Outfit with which we have absolutely no trouble,"
was what a dealer recently said to the maker of*

... S A M ' S C O M B I N A T I O N ...

BLOW PIPE OUTFIT



A PERFECT BLOW
PIPE OUTFIT
OVERCOMING ALL
OBJECTIONABLE
FEATURES



Guaranteed by the makers.
Guaranteed to the seller.
Guaranteed to the users.
Guaranteed to do all that
is claimed for it.

Heavy Brush Flame or Finest Needle Point Blaze; no smoke, non blow-out. Indispensable for Flowing Bridges, Soldering Crowns, Soldering Caps, Waxing up, Heating Water, etc. For sale by your dealer or sent direct on receipt of price

PRICE OF OUTFIT COMPLETE, AS ABOVE ILLUSTRATED, \$14.50
PRICE OF OUTFIT AS ILLUSTRATED, WITHOUT FOOT BLOWER, \$10.50

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CONSOLIDATED DENTAL MFG. CO.
115 WEST 42D STREET, NEW YORK

BRANCHES:

Chicago, Ill.
Boston, Mass.

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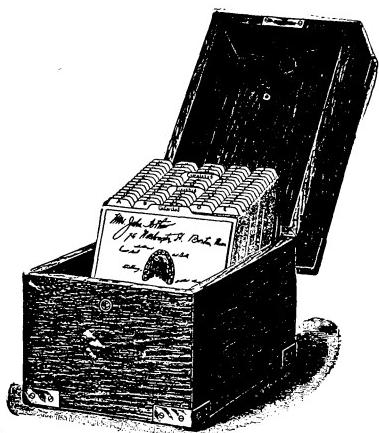
Brooklyn, N. Y.
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And Agencies throughout the United States and Canada.

The Triggs Dental Charts.



A Modern Card Index System of

DENTAL BOOKKEEPING.

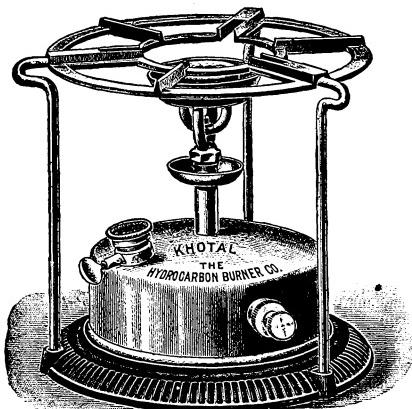
It affords easy and rapid reference to all accounts, no matter how old; is simple in construction and inexpensive. We carry three styles of charts and can make special forms to order. Prices for stock charts, including case and index:

\$6, \$8, \$10 and \$12.

Write us for samples and any further information desired.

THE TRIGGS SYSTEM OF DENTAL CHARTS may be ordered from the Consolidated Dental Mfg. Co., Sole Agent, at its home office, No. 115 W. 42d St., New York, from its branch houses in Boston, Providence, Brooklyn, Buffalo, Philadelphia, Baltimore, Atlanta, Chicago, New Orleans, and from any of the Company's agencies throughout the U. S. and Canada, and foreign countries.

THE KHOTAL STOVE



The illustration represents a very popular form of Heating Apparatus. It is without doubt the best kerosene burning apparatus made. Has no wick. By operating the air pump shown in cut near the center front of the reservoir, the oil is forced upward through the burner, the heat of which converts the oil into a vapor, that when ignited produces a clear blue flame without any smoke or odor. The tank cannot be filled while burning, because the removal of filler cap instantly extinguishes the flame. A quart of oil will last five hours with stove burning at full capacity. The flame can be regulated to a minimum. Perfect combustion is always maintained. For dental laboratory purposes, this stove is exceedingly useful. It serves all the purposes of the Bunsen gas heater, and its uses are universal. It produces a heat sufficient to boil a quart of water in less than four minutes. Its efficiency, cleanliness, freedom from smoke, soot, odor and danger; its attractive appearance and other exclusive features combine to make it the most satisfactory oil-burning apparatus made.

Height, 9 $\frac{1}{4}$ inches; Diam., 9 $\frac{1}{4}$ inches; Capacity of Reservoir, one quart; Shipping Weight, 11 lbs.

PRICE - - \$4.00

THE HYDROCARBON BURNER CO., Makers.

Consolidated Dental Mfg. Co.

SOLE AGENTS TO THE DENTAL TRADE AND PROFESSION.

Special Notice to the Dental Profession.

Listerine

in the

Original Package



ORIGINAL PACKAGE.

3-oz. Size—LISTERINE—Price 25 cents.

LE beg to announce that, in addition to the regular size 14-oz. bottle in which LISTERINE is offered to the trade, a smaller package, containing **three ounces** is now placed upon the market; the consumer of LISTERINE is thereby enabled to purchase, under the seal and guarantee of the manufacturer, even the smallest quantity likely to be required.

Wholesale druggists throughout the United States are prepared to promptly supply Pharmacists with the new size LISTERINE.



Lambert Pharmacal Company, St. Louis.



NOTE.—Rate for advertising in this department of ITEMS OF INTEREST is ten cents per word, including captions, "Wanted," "For Sale," etc., and address. Initials charged as words. Advertisements should reach us by the 20th of each month to insure insertion in the following month's issue, and are payable in advance.

CONSOLIDATED DENTAL MFG. CO., Publishers, 115 W. 42d St., New York, N. Y.

1926—FOR SALE.—Columbia Fountain Cuspidor, etc.; all modern; complete outfit, except operating tools, and good will for \$1,200; \$500 monthly; cash receipts over \$4,000 for year; city over 100,000; finest climate in world. DR. A. J. STEVENS, Los Angeles, Cal.

1927—FOR SALE OR RENT.—Established practice in Holden, Mo.; 2,300 population; fine opportunity for man with limited means; ill-health. Address W. D. GRAY, Holden, Mo.

1928—PRACTICE and up-to-date outfit in hustling town New York State; only dentist; office supplied with heat, electricity, gas and water; \$2,000 practice; cash price, \$500. Address DENTAL ASSOCIATION, 174 East Main St. Rochester, N. Y.

1929—FOR SALE.—An up-to-date outfit and a \$7,000 practice in Northwestern city; price, \$2,500; this will bear investigation, but do not write unless you have \$1,500 cash. Address "OTHER BUSINESS," care Marshall-Shafer Pierce Co., Minneapolis, Minn.

1930—WANTED, immediately, a lady assistant in conservative practice; give full particulars in first letter. Address "LOGAN," care "Items of Interest," 115 W. 42d St., New York.

1931—FOR SALE.—Dental office at invoice; wish to retire. Kohler Bldg., Hagerstown, Md.

1932—FOR SALE.—Dental office and practice; one of the best openings in Western North Carolina. For full particulars address care L., Box 24, Marion, N. C.

1933—WANTED.—Hundred practices for ready buyers; sell on commission; lists for stamp; assistants furnished free. NATIONAL DENTAL AGENCY, Lima, Ohio.

1934—FOR SALE.—Practice and outfit at cost of outfit; ill health cause; fine opportunity for young man. Address G. L. STONE, 102 Central Blk., Pueblo, Col.

1935—FOR SALE.—Dental office and practice; fully equipped; two chairs; \$6,000 yearly. Address "BROOKLYN," care Consolidated Dental Mfg. Co., Brooklyn, N. Y.

1936—WANTED.—Operators and laboratory men for good positions in all sections of the country; no fee charged for securing positions; practices wanted; we have a number of customers with ready cash. NEW ENGLAND DENTAL AGENCY, Hartford, Conn.

1937—FOR SALE.—To good hustler, one-half interest in \$4,000 business. Address "I. M.," care "Items of Interest," 115 W. 42d St., New York.

1938—FOR SALE.—Paying dental practice (established 20 years) and nice residence; pleasant town, 6,000 population; 17 miles from Boston. Address "H.," care "Items of Interest," 115 W. 42d St., New York.

1939—FOR SALE.—Well equipped office and practice of between \$2,500 and \$3,000; can turn over enough plate work to pay for same; \$800 cash. Inquire of MAIL & BANTA DENTAL DEPOT, Terre Haute, Ind.

1940—FOR SALE.—Back volumes: Cosmos, \$2.00; Items, \$1.00, and International, \$2.00. DENTIST, 167 W. 81st St., New York.

1941—FOR SALE.—An old established dental office, fully equipped; nicest office in the county; owner not a dentist; this is an opportunity seldom offered. Address G. F. O. KIMBALL, Vergennes, Vt.

See following page.

Wants, For Sale, Etc.—Continued.

1942—SPLENDIDLY equipped office in Pennsylvania town of 45,000; \$2,000 t., \$2,500 per annum; best reasons. Address "L," care Consolidated Dental Mfg. Co., Philadelphia, Pa.

1943—FOR SALE.—Half interest; only advertising office; city 38,000; Iowa. Address DR. CAREY, 4208 Berkley Ave., Chicago.

1944—FOR SALE.—Wilkerson chair, bracket and table. DENTIST, 976 Bedford Ave., Brooklyn, N. Y.

1945—FOR SALE.—Private practice; over \$3,000 yearly; near Prospect Park, Brooklyn; two chairs and furnishings complete; \$1,600 cash. Address CONSOLIDATED DENTAL MFG. CO., 5 Willoughby St., Brooklyn, N. Y.

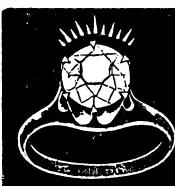
1946—FOR SALE.—Two-chair office; Toledo, O.; \$3,000 business; best location in city. If you mean business, address "OPPORTUNITY," care "Items of Interest," 115 W. 42d St., New York.

1947—FOR SALE.—Good office and practice in eastern Iowa town of 2,000. Address "F. F." care Consolidated Dental Mfg. Co., Chicago, Ill.

1948—FOR SALE.—My office and practice in the thriving town of Missoula, Mont.; population, 6,000; ten years' practice; average, \$2,500; everything complete; price, \$600; will give sixty days to introduce buyer; best reason for selling. Address W. F. ROBINSON, Missoula, Mont.

1949—WANTED.—First-class operator, extractor and crown and bridge worker; must be thoroughly experienced; permanent position; graduate of Pennsylvania preferred, with absolutely corr. et habits; reference; in haste. Address "1949," care "Items of Interest," 115 W. 42d St., New York.

1950—FEMALE assistant (graduate) to devote herself exclusively to cleaning teeth. Address "1950," care "Items of Interest," 115 W. 42d St., New York.



A NEW DIAMOND

paid for your examination. Write today for our catalogue "I." It contains illustrations of Rings, Studs, Pins, etc., in latest styles made from 14k. solid gold. It also shows the advantage of dealing direct with the Importer.

THEO. R. FIELD & CO., 638 Wells Street, CHICAGO, ILL.

PATENTS procured promptly and
properly in all countries.
Trade-marks and copy-
rights. **Davis & Davis**, Attorneys-at-Law. Offices:
St. Paul Building, New York, and 709 G St., opp. Patent
Office, Washington, D. C.

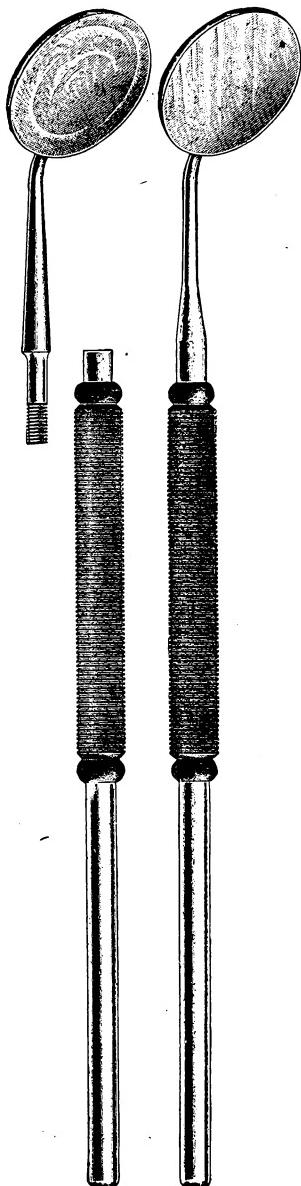
Ripans Tabules cure nausea.
Ripans Tabules cure headache.
Ripans Tabules cure flatulence.
Ripans Tabules cure dyspepsia.
Ripans Tabules cure biliousness.
Ripans Tabules cure constipation.
Ripans Tabules: pleasant laxative.

ERROR IN PRICE OF PERFECTION IMPRESSION MATERIAL

Owing to a typographical error the price of
PERFECTION IMPRESSION MATERIAL
was advertised in the November number of
the **ITEMS OF INTEREST** at 25c. per Box.
The **CORRECT PRICE** is 50c. per BOX.

DETROIT DENTAL MFG. CO., Detroit, Michigan

MOUTH MIRRORS



We here offer to the profession an article which is so much superior to anything ever made in this line, that there is no comparison between them. The back and stem are made of German silver. The handle is metal with a rubber grip. This does away with any wooden handles to break.

All metal is nicely nickelized.

The glass is set into the back absolutely water tight, so that no saliva can penetrate behind the glass to make it filthy, and destroy the silvering. If the saliva has access to the back of the glass, it will turn the silvering yellow and make the mirror useless. One of these instruments will outlast a half dozen others and give better service as well. It can be kept absolutely clean, as there is no recess for the absorption and retention of disease germs. We guarantee these mirrors to be superior to any others made.

We make four different sizes, $\frac{5}{8}$ in., $\frac{7}{8}$ in., 1 in. and $1\frac{1}{4}$ in. In ordering, please order by size of glass, and not by the number in some other firm's catalogue.

We also make these glasses with the shank bent the opposite way from which it usually is bent. This makes a convenient form of Glass for buccal cases, as it is in much better shape for distending the cheek than the regular form, and the hand is brought entirely out of the way. This style is known as our Reverse Mirror.

We make two styles of handles, solid and cone socket. Cone socket handles can be furnished separate, and make excellent excavator handles.

PRICES.

$\frac{5}{8}$ or $\frac{7}{8}$ in. Solid Handle, Plain or Mag.....	\$.75
$\frac{5}{8}$ or $\frac{7}{8}$ in. Cone Socket Handle, Plain or Mag..	.85
1 in. Solid Handle, Plain or Mag.....	.85
1 in. Cone Socket Handle, Plain or Mag.....	.95
1 $\frac{1}{4}$ in. Solid Handle, Plain or Mag.....	1.25
1 $\frac{1}{4}$ in. Cone Socket Handle, Plain or Mag.....	1.35
Cone Socket Handles	Each .20
Cone Socket Handles	per Dozen 2.25

Detroit Dental Mfg. Co. DETROIT, MICH.,
V. S. A.

(See Note Opposite.)



SPECIAL NOTICE

For the next few months
we propose to submit,
in these pages, irrefu-
table evidence as to the
power of

Dentacura
TRADE MARK

To RESTORE and MAINTAIN
NORMAL CONDITIONS
of the MOUTH, TEETH and GUMS

We respectfully ask the earnest
consideration of the
DENTAL PROFESSION
to this evidence.

DENTACURA CO., NEWARK, N. J.

→ Read the Evidence on Next Page ←

WHAT IS DENTACURA?

Dr. W. H. PITCHER,
*Pres. of The Tri-State
 Dental Association of
 Ill., Ky. and Ind., referring
 to the only OFFICIAL
 SCIENTIFIC Investigation
 of Antiseptics, Prophylactic and Dentifrices ever
 made by the DENTAL
 PROFESSION, states in an
 article published in "The
 Dental Hints," April, 1901.*

"It is now over two years since the five dental scientists composing this investigating committee unanimously agreed that Dentacura stood *facile princeps* among dental therapeutics, whether considered as a Detergent, Antiseptic or Prophylactic. It is no longer an experiment. By merit alone it has become the standard dentifrice, as well as the ideal antiseptic for oral prophylaxis, and recognized specific for the treatment of dental diseases pathognomonic of bacterial infection."

SCIENTIFICALLY COMBINES
 ALL THE
 CLEANSING, HEALING,
 & PRESERVING PROPERTIES OF
 EUCALYPTOL, THYMOL,
 FORMALDEHYDE,
 BORIC ACID, MENTHOL,
 BENZOIN, CAMPHOR,
 CINNAMON & WINTERGREEN.

"It is Written in Testimony"

AN EFFICIENT PROPHYLACTIC AND THERAPEUTIC

From
 Prof. F. G. S. GORGAS,
 M.D., D.D.S.,
 Dean University of Maryland
 Dental Department,
 Baltimore, Maryland.

"I have, both personally and in my practice, been using 'DENTACURA' for a number of months past to the satisfaction of myself and patients, and do not hesitate to recommend it as an efficient antiseptic in the treatment of diseases of the mouth, teeth and gums.

"The ingredients of 'DENTACURA' commend this preparation as possessing such efficiency as cannot fail to produce beneficial effects as a PROPHYLACTIC and THERAPEUTIC."

From
 W. T. McLEAN, M.D., D.D.S.
 Secretary Cincinnati College
 of Dental Surgeons and Oral
 Hospital; Treasurer Cincinnati
 Academy of Dentistry,
 Cincinnati, Ohio.

NO QUESTION REGARDING ITS PROPERTIES

"From the results noticeably following the use of 'DENTACURA,' I can heartily recommend it. There is no question about its antiseptic properties, and *I feel sure ITS USE WILL BECOME UNIVERSAL.* I shall prescribe it."

Dentacura
TRADE MARK

From
 DR. J. FOSTER FLAGG,
 Swarthmore, Pa.

FROM ONE WHOM EVERY DENTIST KNOWS

"Regarding your 'Tooth Paste,' I would say that for many years I have noted the decidedly beneficial results from detergent and antiseptic remedies as applied in the mouth, and the more so *in proportion as the need existed.*

"Your preparation is very gratifying to patients, and the results from its use are eminently satisfactory."

FROM DR. FLAGG'S SUCCESSOR

From
 Dr. JAMES D. PRICE,
 Successor to
 J. Foster Flagg, D.D.S.,
 1524 Chestnut St., Phila., Pa.

"Some three years ago my predecessor, Prof. J. Foster Flagg, D.D.S., handed me a sample of 'DENTACURA' with an expression of his high esteem of its value as an antiseptic and detergent.

"Since then I and my family have been using it and like it very much—my wife and children will simply use no other.

"In my practice 'DENTACURA' has proven itself to be the ideal adjuvant for the prophylaxis and general antiseptic treatment of diseases of the mouth, teeth and gums.

"Its alternative influence is marked, especially in cases of pyorrhoea, sore, bleeding and spongy gums, etc."

LAUGHLIN FOUNTAIN PEN

The Best at Any Price

Sent on approval to
responsible people.

A Pocket Companion of
never ending usefulness, a
source of constant pleasure
and comfort.

To test the merits of

Items of Interest

as an advertising medium
we offer your choice of
these popular styles super-
ior to the

\$3.00

grades of other makes for
only

\$1.00

Unconditionally Guaranteed Pre-eminently Satisfactory.

Try it a week, if not suited,
we buy it back, and give you
\$1.10 for it (the additional ten
cents is to pay for your trouble
in returning the pen). We are
willing to take chances on you
wanting to sell; we know pen
values—you will when you
have one of these.

Finest quality hard Para rubber
reservoir holder, 14k. Diamond
Point Gold Pen, any desired
flexibility in fine, medium
or stub, and the only perfect
ink feed known to the science
of fountain pen making.
Sent postpaid on receipt of \$1.00
(Registration, 80 extra.)

This great Special Offer is
good for just 30 days. One of
our Safety Pocket Pen Holders
free of charge with each
pen.

Remember—There is No
“just as good” as the **Laughlin**:
insist on **it**; take no
chances.

State whether Ladies' or
Gentlemen's style is desired.
Illustrations are full size of
complete article. Address

LAUGHLIN MFG. CO.
83 Griswold St.,
DETROIT, MICH.



If your subscription to ITEMS OF INTEREST
expires with this number do not fail to re-
new it at once. There is a subscription
blank enclosed with this number.

NIRVANIN

Non-Toxic Substitute for Cocain.

More prolonged and equally pronounced
Anesthesia without systemic disturbances. Solu-
tion is antiseptic. Offered in tablets for
hypodermic use.

ORTHOFORM

Non-Irritating Anesthetic.

Applied to dental cavities and after extraction
for Relief of Pain. Anesthesia continuous for
from 10 to 48 hours.

ARGONIN

Antiseptic, Disinfectant, Deodorant.

Especialy serviceable in *Pyorrhea, Fistulous Abscesses* and in *Suppurative Conditions* generally.

FERIPYRRIN

Non-Corrosive, Styptic, Hematinic, Anæsthetic.

Superior to ferric chlorid or other prepara-
tions of iron, causing no pain or destruction
of tissue.

Literature on application to Licensees.

VICTOR KOECHL & CO.

122 Hudson Street, N. Y.

Beta-Eucain

(Eucain Hydrochlorate "B")

In a report made at the Academy of Medicine, Paris, March 29, 1898, published in The Bulletin Médical of March 30, 1898, Prof. Reclus stated:

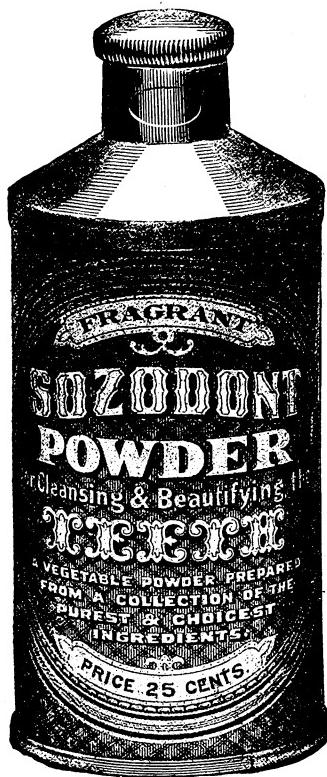
"Beta-Eucain possesses a number of undubitable advantages. In the first place, its solution can be boiled without undergoing decomposition, thus permitting it to be sterilized by heat. This cannot be done with cocaine."

"In the second place, solutions of Beta-Eucain are stable, and this is the case, to such an extent, that he has been able, in conjunction with Dr. Legrand, to perform a number of long and delicate operations with solutions that were more than four months old. This is far from being possible with cocaine solutions, as they change at the end of four or five days. Finally, and this is really the most important point, Beta-Eucain is $\frac{3}{4}$ times less toxic than cocaine. There is one more very marked advantage in Beta-Eucain, which is of special importance to dentists. The practice after cocaineization to let the patients get up and go after the local anesthesia is not free from danger, as, with the assumption of the erect posture, there frequently appears vertigo, a tendency to syncope, gastric pain and vomiting. With Beta-Eucain, however, the patient can get up after the operation and immediately walk without any risk, and this fact alone should cause it to be used instead of cocaine in all dental operations."

Eka-Iodoform, Formalin, Formalin Sterilizer, Parafarm, Trikresol, Crede's Citrate and Lactate of Silver, and Xeroform.

SCHERING & GLATZ, New York,
Sole Agents for U. S.

Literature upon application.



EXACT SIZE.

Something New!

SOZODONT TOOTH POWDER

*New Style Can (Patented)
Put up in a Box, Price 25c.*

DENTISTS who favor the use of SOZODONT will be glad to tell their patients that SOZODONT POWDER may now be had in this greatly improved and exceedingly convenient form at all the stores where high-class toilet preparations are sold. Heretofore it has not been possible to secure this excellent POWDER in a handy box. Those DENTISTS who are not familiar with the superior qualities of SOZODONT will be furnished with analyses, litmus paper for tests and the necessary samples of both the Liquid and Powder forms.

HALL & RUCKEL.

Established 1848

NEW YORK CITY.

“Dental Uses of Phénol Sodique”

The title of a new pamphlet summing up the indications for Phénol Sodique in dentistry, as found in dentists' private reports, dental journals and text-books.

It gives the result of many years of experience of the best practitioners. Every dentist should have a copy. Sent upon request.

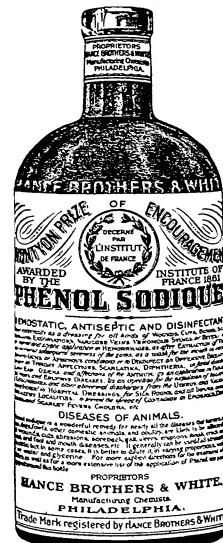
Write for Literature and a trial Sample.

HANCE BROTHERS & WHITE

NEW YORK
CHICAGO
PITTSBURG
LONDON

ESTABLISHED 1855

**Pharmaceutical Chemists
PHILADELPHIA**



We Don't Blame You, Doctor,

For trying the new anaesthetic,
for it may be better than

WILSON'S

but if you call for WILSON'S
insist upon getting WILSON'S,
and if your dealer does not
carry it in stock we will
gladly mail it to you upon
receipt of price. . . .
WILSON'S is the most
imitated anaesthetic on the
market, but stick to the
"Old Reliable" and insure
yourself perfect results.

Sold Everywhere

1 oz., \$1.00; 2 ozs., \$2.00;
6 ozs., \$5.00; 20 ozs., \$15.00



Central Chemical Co.
WELLSVILLE, N. Y.

For Sale by
CONSOLIDATED DENTAL MFG. CO

Abscessed Antrum

Is most successfully treated with a non-irritating ALKALINE antiseptic, that promotes osmosis, and gives a distinct alterative effect when applied to diseased tissue. This result is produced by

Glyco-thymoline

(KRESS)

It is especially indicated after extraction and other surgical wounds of the mouth. As a wash for Abscessed Antrum and a topical application in

Pyorrhoea Alveolaris

Its therapeutic action is unequalled.

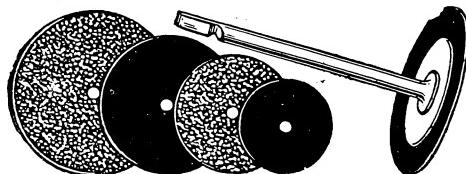
SPECIAL OFFER:

A pound bottle of GLYCO-THYMOLINE (Kress) will be sent free to any Dentist who will pay express charges.

M'r's Chemists. KRESS & OWEN CO.,

221 Fulton St.
NEW YORK

Hall's Carborundum Rubber Disks



These disks are made thin and flexible about the same in thickness as paper disks, but more durable; having a hard rubber backing, which admits of more pressure and rapid cutting.

The grit with which these disks are made is the celebrated new abrasive CARBORUNDUM, which is noted for its remarkable hardness and keen cutting qualities.

The disks are particularly useful for trimming natural teeth and roots, for Caps, Crowns and Bridges; also for grinding Porcelain Crowns, Inlays, enlarging spaces between teeth, etc. By reinforcing the disk with a full sized washer, a very thin and perfectly rigid side cutting disk is obtained, which has all the advantages of a solid wheel without the liability of breaking from side pressure.

Price, 40 Cents per Package.

Hall's Abrasive Wheel (Patent Applied For)

Is a new grinding wheel for dressing off rough surplus rubber, just after removing the plate from the vulcanizer. Cuts very fast, much superior to files or scrapers. It is made of numerous layers of emery paper, which may be removed one at a time when worn out, exposing a fresh layer for further use. Is very solid and durable; its narrow, convex edge, will fit any part of a plate. Two sizes, 1 and 1½ inches diameter. Price, 15 and 20 Cents Each.

Hall's White Metal Bars Ribbed

One of our bars put in a lower or partial rubber plate will double its bending strength. Our strengthening bars are made of a superior quality of metal, very stiff and strong, with cross ribs. Prevents them drawing through the rubber. We can justly claim them to be the best bars on the market.

Price, 75 Cents per Box.

WM. R. HALL & SON

115 North 17th Street,
Philadelphia, Pa.

Goods sent postpaid on receipt of price in Post Office or Express Order.

DR. R. B. WAITE'S LOCAL ANAESTHETIC

Is guaranteed to please or money refunded.

THE ANTIDOLAR MFG. CO.

GENTLEMEN: I used R. B. Waite's Local Anæsthetic in the Philadelphia Dental College with great success and satisfaction to the faculty and patients.

Yours truly,

GEO. R. HARDING, D.D.S.

September 15, 1901.

THE ANTIDOLAR MFG. CO., SPRINGVILLE, N. Y.

DEAR SIRS: For nearly four years have used nothing but Waite's Local Anæsthetic with the greatest satisfaction.

LOUIS FRANCHERE, L.D.S., D.D.S.,
Professor of Pathology at the Dental College of the Province
of Quebec.



FREE

An all metal or glass barrel syringe upon
receipt of your first \$5.00 order.

FOR SALE BY ALL DENTAL DEPOTS.

PRICE, 1 oz. \$1.00; 2 ozs. \$2.00; 6 ozs. \$5.00; 12 ozs. \$10.00; 20 ozs. \$15.00.
Mailed upon receipt of price.

THE ANTIDOLAR MFG. CO. SPRINGVILLE,
ERIE CO., N. Y.

For sale by CONSOLIDATED DENTAL MFG. CO.

Five-Grain
Antikamnia

Tablets

Are

No Friend to Pain

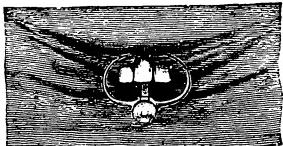
No Matter When - No Matter Where

(TWO EVERY THREE HOURS)

The Antikamnia Chemical Company, . . St. Louis, U.S.A.

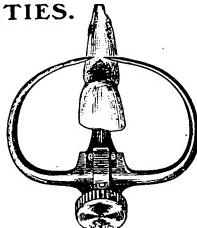
The Hatch Cervical Rubber Dam Clamp FOR LABIAL AND BUCCAL CAVITIES.

Patented January 17th, 1888.



This clamp is designed for use in filling that class of troublesome cases where the cavity extends very high on the labial or buccal surface of the root.

It has been used for years with entire satisfaction.



PRICE, \$3.00.



HULL'S CARBO SEPARATING DISK

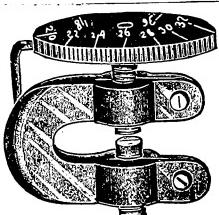
Makes Crown and Bridge Work Easier.

It is a thin disk about 15/1000 of an inch in thickness, cutting on edge and sides both dry and wet, without rapid wear or glazing.

A. S. BILLINGS, Sole Agent for United States, except New England.

Made in sizes $\frac{3}{4}$, $\frac{5}{8}$ and $\frac{1}{2}$ inches.

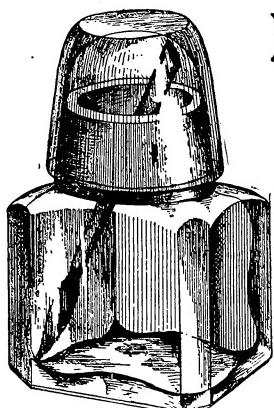
Price, 10 Cents each; \$1.00 per dozen.



The C. C. Plate Gauge

A simple and convenient gauge for the accurate measurement of metal plate. This is a well made, inexpensive article which will give correct readings to within 1-2000 of an inch.

PRICE, \$1.50.



New Bottles

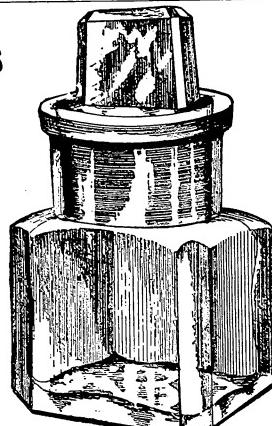
Cuts Exact Size of Bottle.

No. 3, a wide mouthed, airtight, glasscapped bottle, will be found excellent for Chloro-Percha, Sandarac, etc.

Price per Dozen, \$1.50.

No. 2, an extra wide mouth, glass stoppered bottle for medicines, allows the pliers free access without gumming neck.

Price per Dozen, \$1.00.



C. C. Moulding Sand.

C. C. Investment Compound.

C. C. Spiral Wire Bands for Engine and Lathe.

Amber Cement and Plastic Rubber.

CHASE COMBINATION DENTAL PLATE CO.,

A. S. BILLINGS, Manager.

OMAHA, NEBRASKA.

Steurer's Plastic Gold. (Improved.)



This is a chemically pure gold in a plastic state, without admixture of any foreign substance, and has been extensively used by dentists at home and abroad for the past eleven years. In its improved form it does not crumble, but when properly annealed works like wax, and denser fillings can be made by hand pressure than with foil by means of a mallet.

It is a great time saver. It will not "ball," but spreads under the plunger and so adapts itself perfectly to the walls of the cavity. Can be used for contour work and will unite with any pure gold.

It is put up in two styles: Small square pieces, in 1-16 oz. vials; Large square pieces, in $\frac{1}{8}$ oz. boxes.

Do not be imposed upon by imitations, as this is the only "Plastic Gold in the world" that has kept up its reputation for so many years.

Price per Bottle, 1.16 oz., \$2.50

Price per Box $\frac{1}{8}$ oz., 5.00

Cash with all orders. Sold at all Dental Depots.

Steurer's Automatic Annealer and Water Heater.

You cannot expect your gold to work well unless it is properly annealed.

As ordinarily done, it is mere guesswork, and is as liable to be wrong as right.

It is wrong to anneal over a naked alcohol flame (as is often done), because it is apt to become contaminated with carbon.

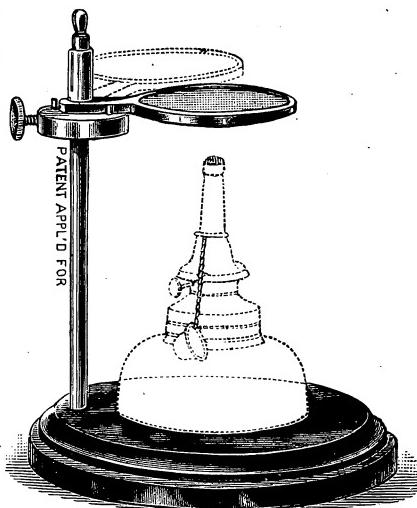
Metal plates get too hot, mica slivers and mixes with the gold. This is all overcome by the use of "Steurer's Automatic Annealer," which always anneals just right, never getting too hot, no matter how long you leave it over the flame. Used with an alcohol lamp. Simple and strong in construction, and no parts to get out of order.

By removing the annealing plate and substituting the aluminum cup, hot water can be obtained in a few moments.

PRICES

Annealer only, without Lamp	- - - - -	\$2.00
Annealer with Lamp	- - - - -	2.30
Annealer, with Lamp and Hot Water Cup	2.50	

Sold by all Dental Depots.



STEURER'S GERMOL

This is an ideal, permanent Germicide and Disinfectant for pulp cavities and root canals. It may also be used as a permanent filling for root canals, either applied on cotton or gutta-percha cones dipped therein. Has no irritating effects upon the soft tissues. It is very diffusible and permeates the tubuli. Has no chemical action upon tooth structure. Destroys all odors and absorbs gases. Formula on bottle.

PRICE PER BOTTLE, \$1.00.

DR. J. A. STEURER,

78 West 47th Street,
NEW YORK CITY.

Dr. Abraham's Oxyphosphate of Zinc Cement

MADE IN GERMANY

5 COLORS

**White
Yellow**

Light Yellow

Grey
Light Grey

**ADAPTED FOR FILLING TEETH AS WELL
AS FOR CROWN AND BRIDGE WORK**

PRICES { Per Box, - \$1.50
 { Extra Liquid, .75

WRITE FOR PARTICULARS IN REGARD TO SAMPLES

Dr. Scheuer's Preparations in Tubes

Ready for immediate use

Formaldehyde-Paste

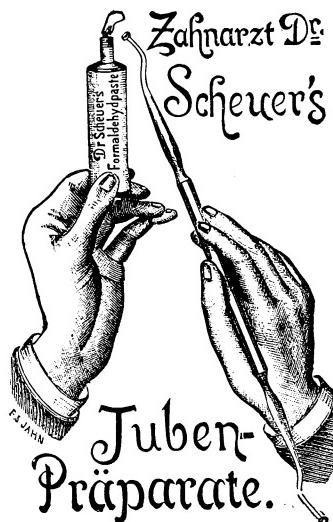
PRICE \$1.50
per tube

For preserving the pulp when it is exposed or when protected only by a thin layer of dentine.

Cauterizing-Paste

PRICE \$1.00

Devitalizes the pulp within 24 to 48 hours, after which time the pulp can be withdrawn without pain.



Jodoform Root Filling

PRICE \$1.50
per tube

an excellent preparation for filling cleaned pulp canals. . . .

We import these preparations from Austria, on account of their

PHENOMENAL SUCCESS

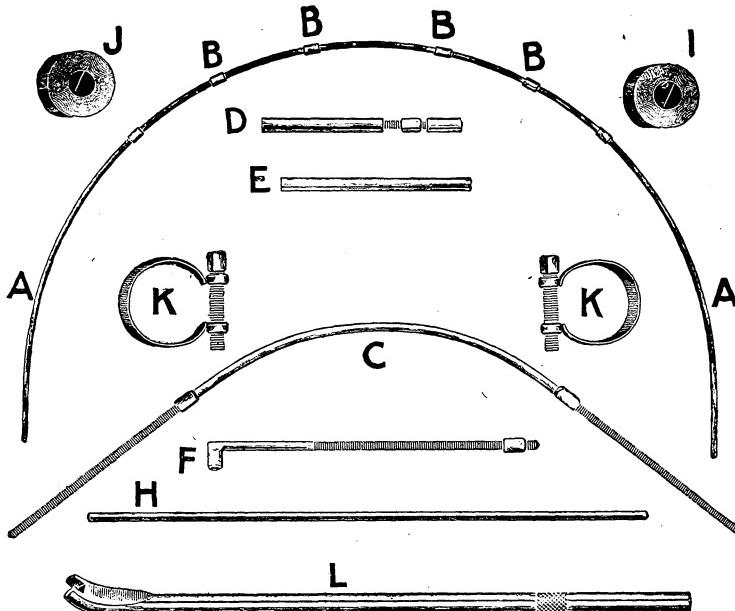
SOLE IMPORTER

GUSTAV SCHARMANN

1181-83 BROADWAY, N. Y. CITY

Dr. C. D. Lukens' Regulating Appliances

PATENTED OCTOBER 23, 1900



The above is a full set, price \$8.00

SEPARATE PARTS

A. Spur Wire.....	\$0.30	I. Light Band Metal.....	\$0.30
B. Retaining Pipes, per dozen.....	0.75	J. Heavy Band Metal.....	0.30
C. Expansion Arch.....	1.50	K. Molar Clamp Band.....	1.50
D. and E. Imp. Jack Screw.....	1.25	M. Bicuspid Clamp Band.....	1.50
F. and H. Retracting Screw.....	1.25	L. Wrench.....	0.15

The mechanical principles involved in these appliances are acknowledged by specialists in Orthodontia to be the acme of perfection; completely overcoming the disadvantages of their predecessors. Special attention is directed to the many advantages of the CLAMP BAND, the hollow clamping bolt acting as a receptacle for the expansion arch or the retracting screw, thus presenting an absolutely smooth surface to the tongue, also rendering the head of the clamping bolt very accessible for tightening with the wrench.

In using the retracting screw in connection with the Clamp Band, it is only necessary to slip the screw through the hollow bolt, thereby making alignment easy and soldering unnecessary.

The double tubular end of the jack screw prevents it from becoming displaced. The retracting screw has brazed tubular end, insuring great strength and lightness.

The band metal is prepared from a special formula; it is perfectly annealed and ready for immediate use and absolutely guaranteed not to stretch.

These appliances are made from selected material, and the workmanship and finish are of the very highest order.

MANUFACTURED ONLY BY

The Meier Dental Mfg. Co., St. Louis, U. S. A.

FOR SALE BY ALL CONSOLIDATED DENTAL MFG. CO.'S BRANCHES

Nothing Succeeds Like Success

GILBERT'S MODEL DRESSING

Was an instant success. It was introduced to the profession just six months ago, to-day it is being used all over the civilized world.

This is a sample of the many voluntary letters of commendation we have on file

Providence R. I.

May 18 - 1901

S. Eldred Gilbert

Dear Sir

Some time

since you kindly sent me sample
of your Model Dressing which I
have given a thorough trial accord-
ing to directions, and find it to
be all you claim for it and now
consider it an indispensable article
in the laboratory

Respectfully Yours

J. Chas. Combe

420 Westminster St.

Mention this journal, give the name of your dealer and we will send
you a FREE SAMPLE.

Price per Package, - - 50 Cents

If your dealer will not supply you, write us about it.

S. Eldred Gilbert

1627 Columbia Ave.,
PHILADELPHIA, PA., U.S.A.

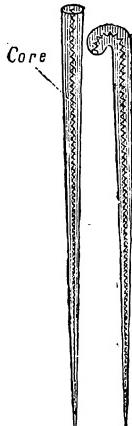
'Look for the above signature on the face of the label.'

Dr. von BEUST'S

Removable Permanent Gutta-Percha Root Filling with Core of Silver.

V. S. PATENT APPLIED FOR.

Deutsches Reichs-G.-M.



Deutsches Reichs-Patent.



Will go to end of canal without turning
at the point and cannot break.

Can be instantly removed in case the tooth
gives trouble; hence saves you hours
of work on an inflamed tooth.

Is admirably adapted as a temporary
filling.

Has all the advantages of an All-Gutta-Percha Rootfilling, and can be used in connection with any of the favorite semi fluid preparations, such as Oxychloride and Oxyphosphate of Zinc, Chlorapercha with its various antiseptic combinations, Wax, or with any of the antiseptic Balsams.

DIRECTIONS

Having prepared the root in the usual manner, select a point which corresponds to the length of the canal, pump in Chlorapercha or your favorite antiseptic with a broach and follow with the cold point, introducing it with a light pumping motion in order to release confined air, feeling your way to the end.

In some cases, a crook (see cut) can be turned in order to facilitate its possible future removal.

FOR SALE BY

CLAUDIUS ASH & SONS, Limited.

BRANCHES:

LIVERPOOL
MANCHESTER
PARIS

BERLIN
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MOSCOW

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BUDAPEST
COPENHAGEN
NEW YORK

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ST. PETERSBURG

SNOW'S SPRING MALLETS

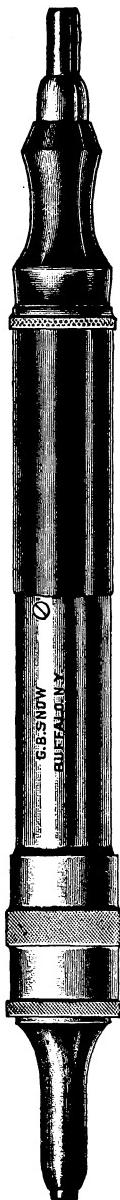
Improvement Patented July 25, 1899



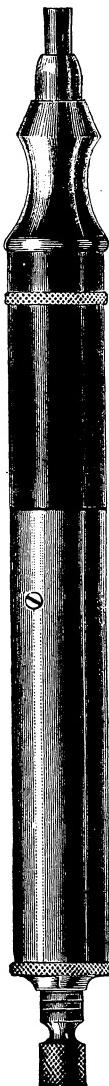
ORIGINAL PATTERN, Variable Stroke, 1-6, $\frac{1}{8}$, 1-12 Inch. Price, \$5.00.



SOUTHWICK PATTERN, Variable Stroke, 1-6, $\frac{1}{8}$, 1-12 Inch. Price, \$5.00.



DOUBLE END, Both Push and Draw Strokes, $\frac{1}{8}$ Inch Only. Price, \$6.00.



STUDENT PATTERN, $\frac{1}{8}$ Inch Direct Blow Only. Price, \$4.50.

These Mallets are the outcome of thirty-five years' experience in the manufacture of Automatic Mallets. The Original and Southwick patterns have lately been improved by the addition of a VISIBLE ADJUSTMENT FOR THE HAMMER STROKE. This is secured by a lock nut, and WILL NOT CHANGE while the instrument is in use. The shape of the hard rubber nose-piece has also been improved, and to make a better fit for the fingers. ALL SNOW MALLETS HAVE THE HARD RUBBER GRIP, or finger hold. Beware of imitations of this feature on inferior instruments. The Snow Mallets are manufactured only by

THE SNOW DENTAL CO., Buffalo, N. Y.

Jodo-Formagen Cement

Trade Mark registered in U. S. Patent Office, April 12, 1898, No. 31458.



IN acute and chronic pulpides this preparation is astoundingly efficacious. It is in its essential parts a combination of Jodine salts and Formaldehyde on the one part, and Eugenol, Carbolic, Lysol on the other, in form of a quickly hardening cement.

NO MORE ARSENIC.

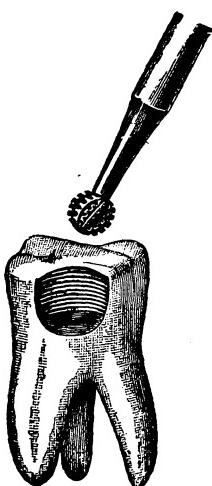
NO MORE EXTRACTION.

Prices:	Regular Package,	\$1.50
	Double Package,	\$2.50

WRITE FOR PAMPHLET.

DIRECTIONS IN EACH PACKAGE.

Cross-Cut Burs Enamel-Fissure Burs

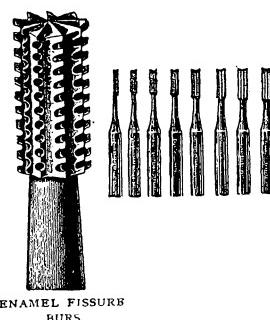


\$2.00 per Doz.

All instruments stamped with this

TRADE ← DAZF → MARK.

Write for Catalogue.
For Sale by
All Dental Depots and Dealers.



GUSTAV SCHARMANN,

1181-1183 Broadway,

Corner 28th Street.

Baudouine Building,

NEW YORK.

This illustration represents a cavity cut by a Cross-Cut Bur. The cut Grooves are of immense value for fixing or holding whatever stoppings are used.

SOLE U. S. AGENT FOR
B. SIMONIS, BERLIN.
A. MEISINGER, DUSSELDORF.

Brewster's HIGH-FUSING PORCELAIN

This Porcelain is the result of a lengthened series of experiments conducted in conjunction with some of the leading porcelain experts in the United States.

Its composition and working qualities are unlike any other porcelain.

It bears the endorsement of the following well known operators, and has their fullest recommendation:

Dr. W. T. REEVES, Chicago.
Dr. W. H. TAGGART, Chicago.
Dr. HART J. GOSLEE; Chicago.
Dr. C. N. THOMPSON, Chicago.
Dr. A. W. McCANDLESS, Chicago.
Dr. J. E. NYMAN, Chicago.
Dr. C. N. JOHNSON, Chicago.
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Dr. A. O. HUNT, Omaha.
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Dr. L. L. BARBER, Toledo.
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The above list contains the names of some of the most expert porcelain workers in the world. Their endorsement is sufficient evidence that a really high-class porcelain has now been produced, one permitting of the highest artistic attainment, combined with a hardness and resistance to fracture hitherto unapproached.

Directions for working, and verbatim opinions of Porcelain Experts, are sent with each box.

PRICE

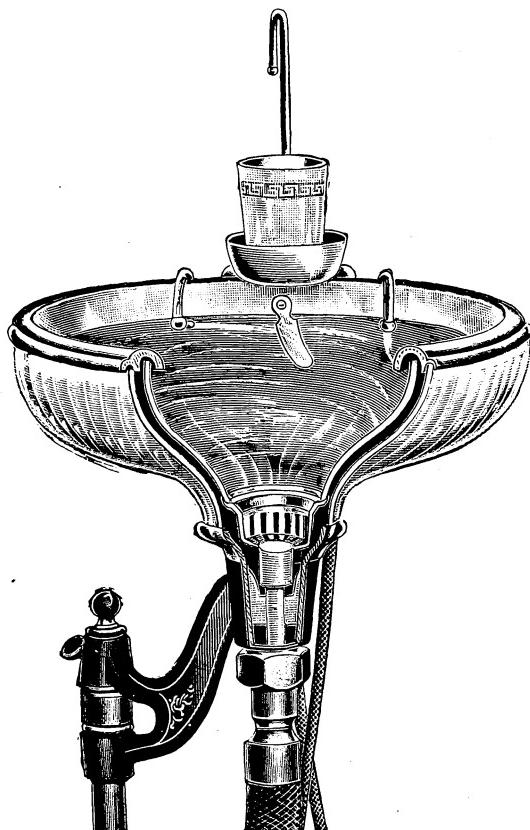
Box of 15 Bottles, Carving Tool, Spatula Knife, Brushes, and Shade Guide.....	\$10.00
Further Supplies, any color, per half, .75c.; per ounce15
Enamel White, for lightening shades, per half ounce75
Special Colors, to be used with oil, in 6 shades, per bottle50
Prepared Oil, for use with above colors, per bottle.....	.15

For Sale at the Dental Houses or direct from

ROBERT BREWSTER, M'fr.
2544 Princeton Avenue, Chicago, U. S. A.

The New Clark Fountain Spittoon

*Has Bowls of Pressed Glass
a Perfect Valve
a Revolving Inner Bowl
Air Space between Bowls
Gold Catcher and Receptacle for Cotton
Pellets, Instantly Removable.*



The water in a Clark Fountain will not back up into bowl, it will not overflow, it will not gurgle or hiss. The valves will not begin to drip and leak, and the spittoon will not make any noise while in operation. You are subject to all these annoyances in buying a single bowl fountain spittoon.

We have experimented with porcelain, earthenware, glass and several metals, and have decided in favor of glass—it does not check or crack, will not become stained and is, by far, the most cleanly in appearance.

Will be glad to answer inquiries.

A. C. CLARK & CO.,

21 E. Randolph Street,

CHICAGO, U. S. A.

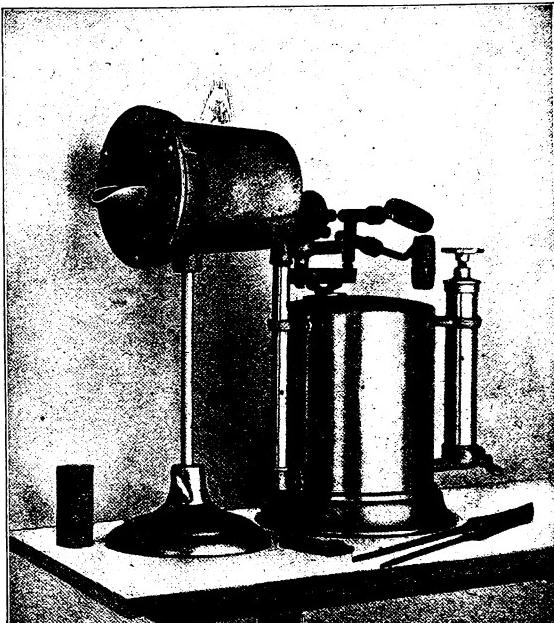
Manufacturers of High Grade Dental Furnishings.



THE TURNER

Gasoline Porcelain Furnace No. 1

FOR CROWN AND BRIDGE WORK.



The Turner Porcelain Furnace No. 1, and Gasoline Blow Pipe in Operation.



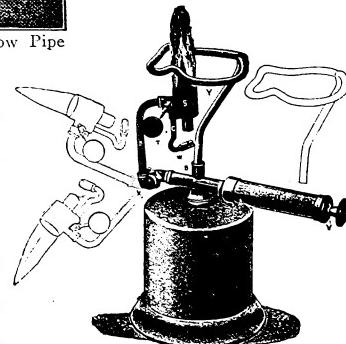
Auxiliary
Bunsen Burner.
Price \$3.00.

These appliances have met with great success in all parts of the country, and we are having inquiries from Europe. We feel confident they will please all who own them.

The Turner Porcelain Furnace,	
No. 1	\$15.00
No. 4D Turner Gasoline Blow	
Pipe	6.00

Furnace with Blow Pipe Complete 21.00

Send for a Descriptive Catalogue.



The Turner Bunsen Burner.
Price, \$4.00.



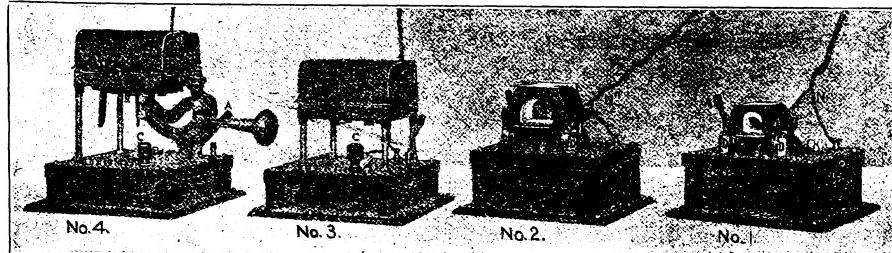
Manufactured
by

THE TURNER BRASS WORKS

123 Kinzie St., Chicago, Ill.



The Hammond Electric Dental Furnaces

Drop Bottom
Continuous GumPlain
Continuous Gum

Crown and Bridge

Inlay

The Electric Furnace is the only thoroughly satisfactory agent for fusing inlays and baking all operative porcelain work for bridges, crowns and plates.

No noise, no smell, no discoloration from gassing.

Among those now on the market, The Hammond Dental Electric Furnaces mark an entirely new departure.

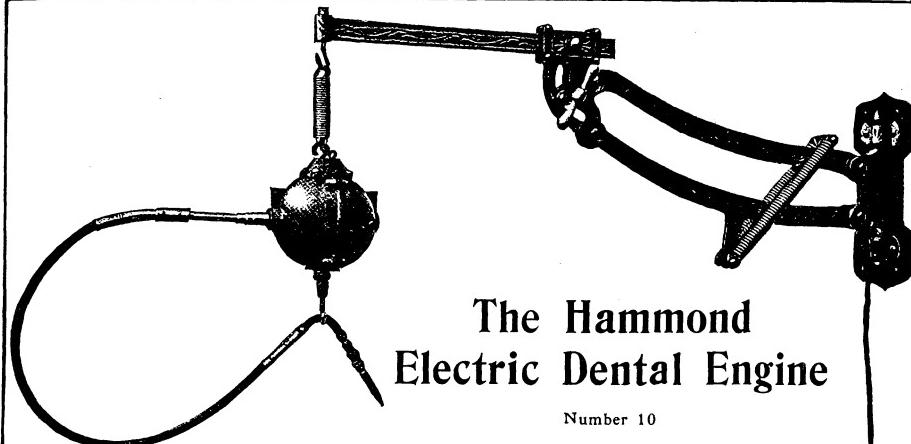
They combine the utmost simplicity of construction and operation with a durability and efficiency not approached by any other furnace at present before the dental profession.

Each furnace is under the most perfect control of the operator, so that he is able to secure just the degree of heat necessary to do the particular work in hand.

The working parts of these furnaces are interchangeable, so that in case of accident they may be removed and replaced in the shortest time.

Size of interior of No. 1 muffle or oven, $1 \times 1\frac{3}{4} \times 15\text{-}16$; size of interior of No. 2 muffle, $2 \times 2\frac{3}{4} \times 1\frac{1}{2}$; size of interior of No. 3 and No. 4. muffles, $3 \times 3 \times 1\frac{3}{4}$.

Send for circulars and testimonials.



The Hammond Electric Dental Engine

Number 10

This engine is one of the strongest and most beautiful machines on the market. It is durable and efficient. It has a Strong Pull and is Strongly Constructed. It runs uniformly smooth and satisfactory. It has a Powerful Pull, and is practically noiseless. The motor has a laminated field and armature, and is shunt wound. These features insure the greatest possible power on all speeds. It is automatically lubricated, and with indifferent care will run for years.

Price complete, including The Hammond Controller, cable, flexible arm and hand piece, \$80.00.

Manufactured by **JOHN F. HAMMOND,** 35-43 West 125th Street,
NEW YORK, N. Y.

W. J. TRUMPOUR, Manager.

DR. J. C. McLEAN, Superintendent.

ATLAS DENTAL LABORATORY CO.

(INCORPORATED.)



The largest and most thoroughly equipped exclusive Dental Laboratory, and the
Only One
producing strictly
High Grade
work at our prices.

Catalogue of prices, envelopes, stickers,
mailing boxes and 1902 calendars
mailed free upon application.

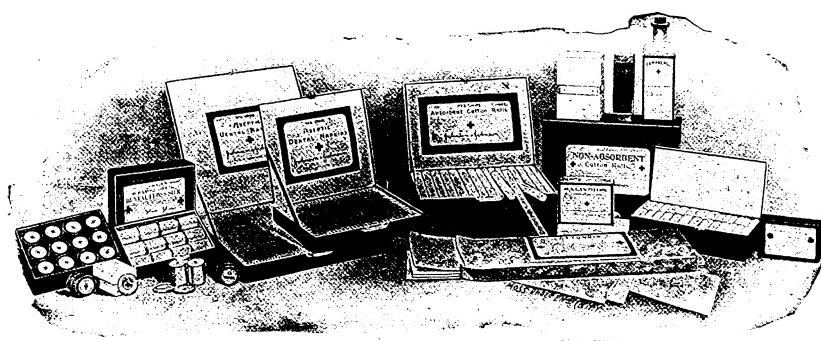
ATLAS DENTAL LABORATORY CO.

OVER S. S. WHITE DENTAL MANUFACTURING CO.

35-37 RANDOLPH STREET,

CHICAGO, ILLS.

JOHNSON & JOHNSON'S



RED CROSS ASEPTIC DENTAL ABSORBENTS

Aseptic Dental Napkins, "No. 2"	{ 50 in box....\$.20 500 in box.... 1.30
Aseptic Dental Napkins, "No. 1" Superior Quality MADE OF FINER HEAVIER MATERIAL THAN HERETOFORE	{ 50 in box... \$.25 500 in box.... 1.85
Absorbent Dental Rolls.....	{ 6 inch, 100 in box....\$.50 1½ inch, 100 in box.... .25
Cottonoid	1/4 lb. packages \$.25

Soft snow-white cotton preparations—sterilized and handled as surgical dressings. Modern methods in dentistry require their use. They are cheaper and more convenient than using "wash-napkins" and are far more pleasing to the patient. Sold by all dealers in Dental Supplies.

JOHNSON & JOHNSON, NEW BRUNSWICK, N. J.

DR. R. C. BROPHY'S Laboratory Gas System



Outfit No. 8

Manufactured by
**THE CHICAGO
DENTAL SPECIALTY
CO.**

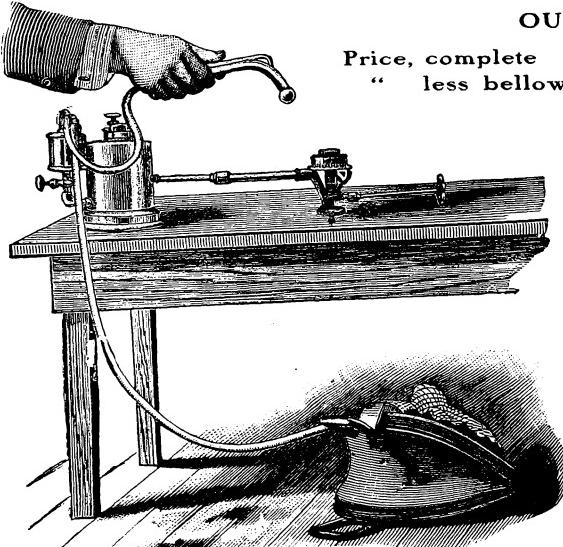
9 So. HALSTED STREET
CHICAGO, ILL.



Outfit No. 9

OUTFIT No. 5

Price, complete - - - - -	\$20.00
" less bellows - - - - -	16.00



Outfit No. 5

Have you gas in your laboratory? If not, would you not like a gasoline outfit that affords the same heat facilities which gas affords? You may have it if you want it, for such an outfit is embodied in our No. 5, illustrated above. The burner runs independently of the bellows; a quarter of a minute's pumping with the stationary pump attached to tank will give a flame which will run steadily from one to two hours, and which is under perfect control. This burner answers every purpose of a gas Bunsen burner, as vulcanizing, etc., though it may be turned on to produce much greater heat, or enough to readily fuse die metal. For soldering purposes, either invested or uninvested work, this outfit is unequaled. The Blow-pipe is of entirely new design, giving a range of from a fine needle flame to a heavy brush flame with one half-turn of the valve. The outfit is made of brass, nickelized and highly polished, and is strong and durable.



PRICE, per 6-lb. Can, 50c
25-lb. Cloth Sack \$2.00

"Imperial Investment Compound is the best I ever used."

W. H. TAGGERT,
D.D.S.



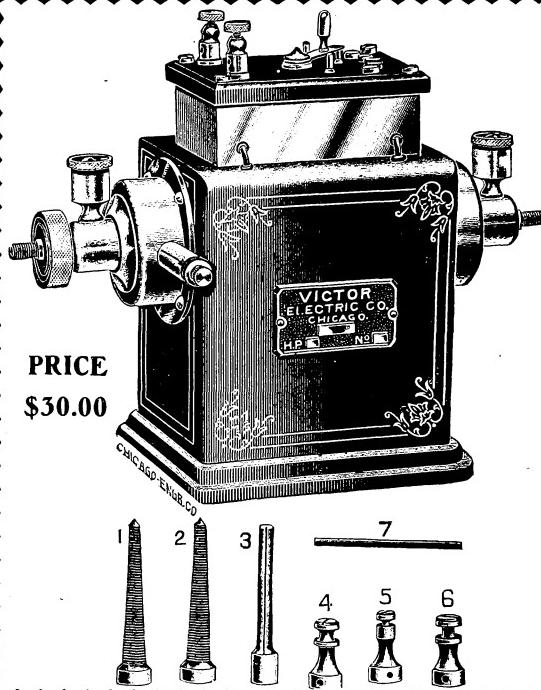
PRICE, PER INGOT, \$1.00

"I am using Dr. Brophy's Lower Denture Metal very extensively for lower plates. It is the best metal for the purpose on the market, in my opinion."

C. F. BRYANT, D.D.S.,
Chief Demonstrator of Prosthetic Dentistry,
Chicago College of Dental Surgery.

WATCH THIS PAGE

ORDER THROUGH YOUR DENTAL DEPOT OR WRITE US
DIRECT FOR FURTHER DESCRIPTION.



No up-to-date laboratory is complete without a Victor electric lathe. Over one thousand now in use. They are noiseless in operation, dust proof, and elegantly finished. They are provided with a complete set of mandrels, including a chuck for taking small drills, etc., which is not shown in the cut. They have a five-speed rheostat and will run equally well on any speed.

We also manufacture electric engines, examination lamps, small motors, and a complete line of electric dental and surgical specialties.

Write for catalogue.

Victor Electric Co.

418-420 Dearborn St.

Chicago, Ill., U. S. A.

W. H. STOWE, President.

F. F. EDDY, Treasurer.

Boston
Dental Laboratory Company
171a Tremont Street, Boston, Mass.

HAND CARVED TEETH

MADE TO ORDER FOR EACH CASE.

Sole Agents for Griswold's System of Removable Bridge Work.

SEND FOR CATALOGUE AND PRICE LIST.

The largest and best equipped establishment in the world, devoted exclusively to fine mechanical work of every description for the Dental Profession.

SPECIALTIES:
CONTINUOUS-GUM CROWN, BRIDGE AND WORK.

ODONTUNDER.

Over Ten Years' Standing Without a Single Fatality.
Write for our Special Terms.

Odontunder is Guaranteed to give Perfect Satisfaction.

Odontunder will not deteriorate. Every bottle guaranteed. Cash to accompany order or goods sent C. O. D.

Single Bottles, 2 oz., \$2.00 by Express.

Three Bottles, 6 oz., \$5.00 by Express prepaid.

Six Bottles, 12 oz., \$10.00 by Express prepaid.

Beware of any one else offering Odontunder for sale or claiming to have bought the formula. Odontunder is sold only from the house direct.

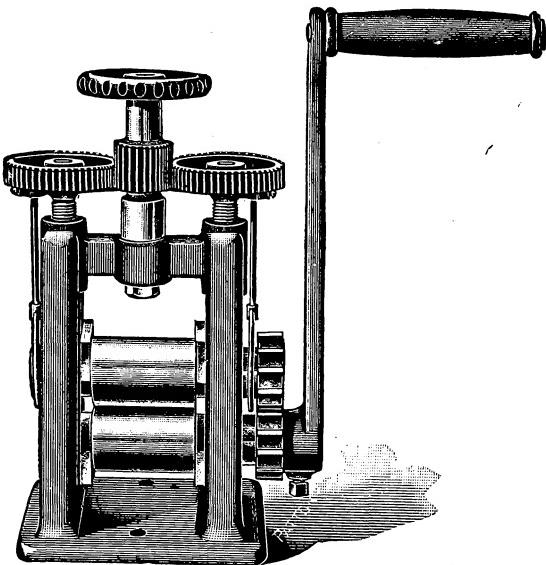
Odontunder Manufacturing Co.,
FREDONIA, N. Y.

References: Commercial Reports, Fredonia National Bank.



THE CROWN DENTAL ROLLING MILL

PATENT APPLIED FOR



For some months past our advertisement has appeared in the various dental journals, illustrating our *Crown Dental Rolling Mill*, the only mill that the dentist should use, for the reason that it is the best made, the strongest built, the easiest to work, and the lowest in price, considering the quality, utility and real worth of the machine offered.

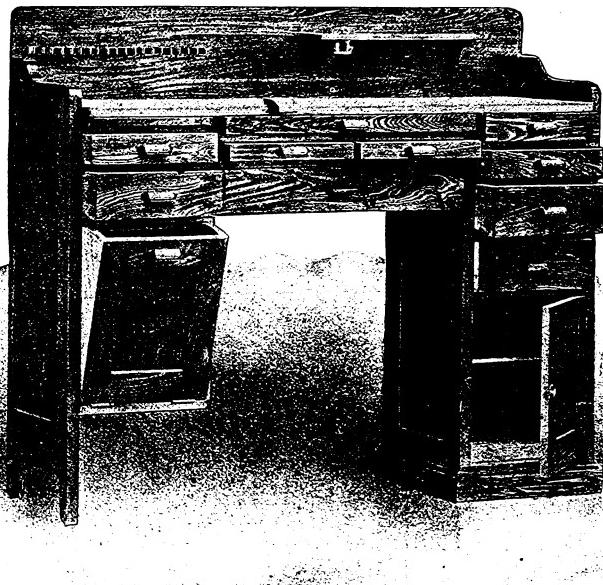
In describing this mill, we will mention that the weight is 45 pounds. *The Rolls*, 2 inches diameter by 3 inches long, are made of the finest crucible steel, hardened, ground, and finely polished; are warranted hard, and free from flaws and soft spots. The gears on the rolls are cut from bar steel, pressure screws are of steel, with geared heads, connecting to the center pinion; one hand operates both screws, at the same time lifting the upper roll by means of our improved device; no springs, and both rolls quickly removed from the frame.

We would be pleased to quote price on application, or you can obtain the mill of any of the leading dental depots in this and other countries.

W. W. OLIVER, Sole Manufacturer,

1487-1489 NIAGARA STREET, - BUFFALO, N. Y., U. S. A.

LABORATORY BENCH No. 10.



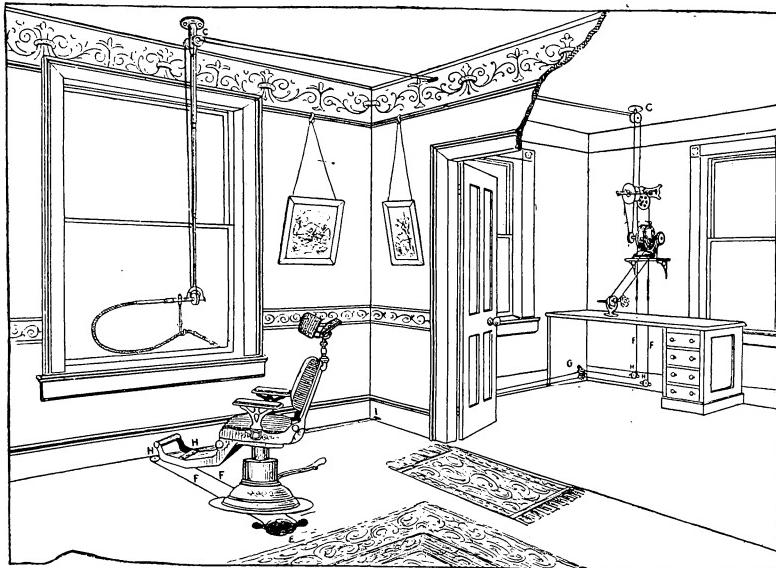
The above cut shows our Combination Laboratory Bench, intended for Plaster, Vulcanite and Gold Work.

Made in three different styles, viz., with vulcanizer stand, without vulcanizer stand and with roll top.

We manufacture a complete line of Dental Office Furniture, consisting of Cabinets, Laboratory Benches, Lathe Tables, Bracket Tables, Students' Cases, Medicine Cases, etc.

Our goods are for sale by most non-association houses and we will furnish you the names of the ones nearest you, at your request. If your dealer cannot supply you, write to us direct. Send for prices and descriptive circulars.

The American Cabinet Company,
Two Rivers, Wis.
For Sale by **CONSOLIDATED DENTAL MFG. CO.**

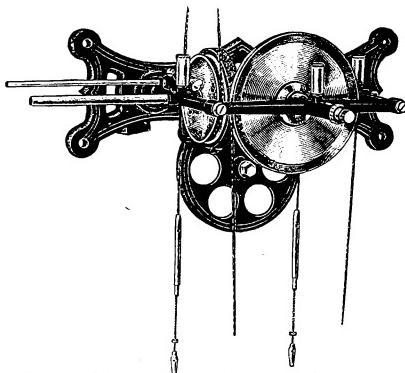


Interior, Showing

L. J. MASON & CO.'S

ALTERNATING CURRENT OUTFIT

As Usually Placed.



Improved Speed Regulator and Reverser.



Improved Foot Switch, used in connection with Speed Regulator.

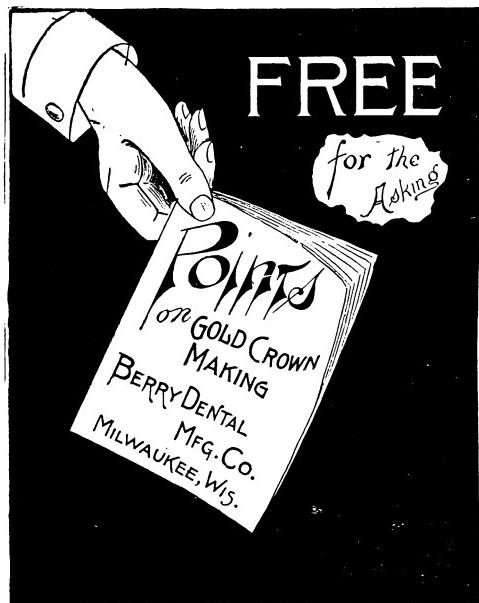
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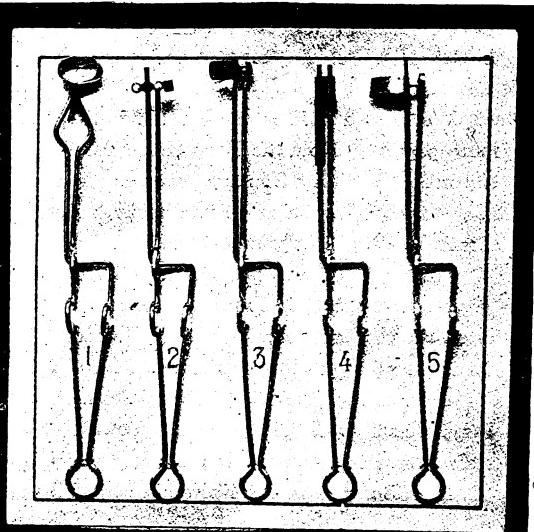
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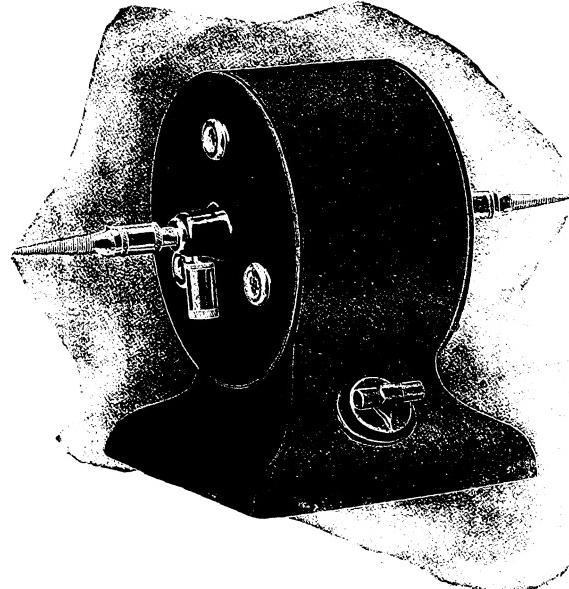
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b. For those who were matriculated in a registered dental or medical college between January 1, 1896, and January 1, 1897, a certificate of two years of high school attendance or pass cards for 24 academic counts obtained by Regents examinations:

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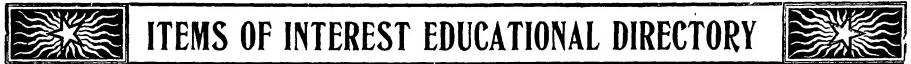
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Opening of regular session, 8:30 A. M.	OCTOBER 1
Matriculation for full regular session closes	OCTOBER 10
Practitioners' Course begins	FEBRUARY 15
Practitioners' Course ends	MARCH 31
Final Examinations begin:	
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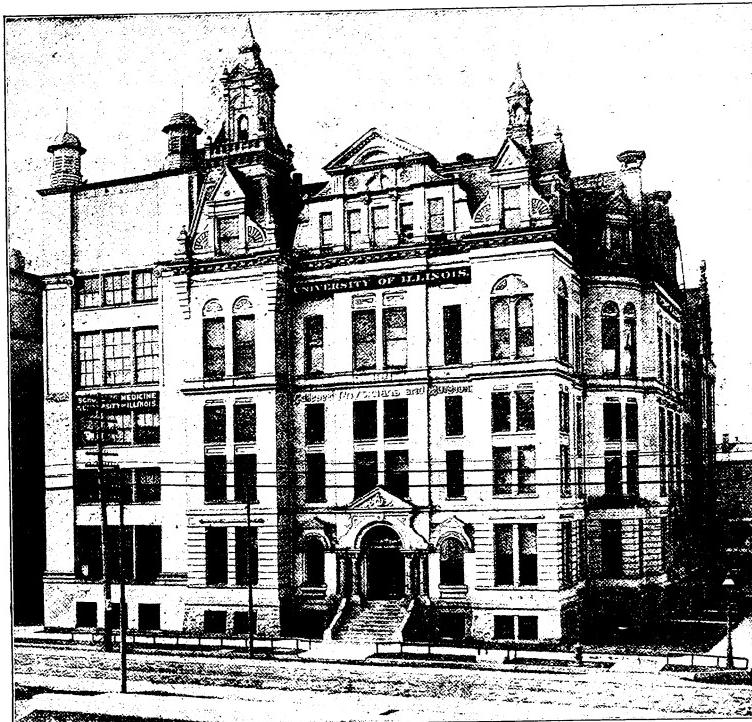
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